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Author:

U.S. Interstate Commerce
Commission

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U. S. Interstate commerce commission.

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in freight rates by carriers in official clas-
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merce commission.Contents.--v. 1, Brief for the carriers.
Docket no. 3400.--v. 2, Brief of argument for
the Toledo, St. Louis and Western railroad com-
pany. Docket no. 3400.--v. 3, Brief on
(Continued on next card)

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izations of the Atlantic seaboard. Docket no.
3400.--v. 4, In re Investigation of proposed
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U. S. Interstate Commerce
Commission

Briefs and arguments

JUL 17 1944

BEFORE THE
INTERSTATE COMMERCE COMMISSION.

In re INVESTIGATION OF PROPOSED
ADVANCES IN FREIGHT RATES BY
CARRIERS IN OFFICIAL CLASSIFI-
CATION TERRITORY.

Docket No. 3400.

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BRIEF FOR THE CARRIERS.

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INTERSTATE COMMERCE COMMISSION.

In re INVESTIGATION OF PROPOSED
ADVANCES IN FREIGHT RATES BY
CARRIERS IN OFFICIAL CLASSIFI-
CATION TERRITORY.

Docket No. 3400.

BRIEF FOR THE CARRIERS.

This is a hearing entered upon by the Commission, upon its own initiative without complaint, under the provisions of Section 15 of the Interstate Commerce Act, as amended June 18, 1910, concerning the propriety of certain advances in class and commodity rates stated in schedules filed by the carriers in official classification territory, and concerning the question of suspending the operation of such increased rates. These tariffs were originally published to become effective at various dates between July 1st and September 1st, 1910, but their effective dates were postponed by the carriers, with the consent of the Commission, until November 1st, 1910, and subsequently until February 1st, 1911. The estimates of the carriers, which were in-

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roduced in evidence, showed that the total amount of increase in freight revenue which would be produced by the application of the proposed rates to the freight traffic of the calendar year 1909 was approximately \$27,000,000. The immediate occasion for the increases in freight rates proposed to be made by the carriers was the large increase in wages to which they became committed, as a result of the various agreements with employees made during the early part of the year 1910. These increases, in the case of most of the companies, became effective immediately and generally speaking on or about April 1, 1910. In order that the Commission might be able to compare the increased operating expense, due to these increases in wages, with the proposed increases in freight revenue, upon the same statistical basis, estimates were made applying the wage scale of 1910 to the number of men employed and the conditions of service obtaining during the calendar year 1909. These estimates showed that the increases in wages on that basis for the same carriers would have been approximately \$34,000,000 as against approximately \$27,000,000 to be secured through the proposed advances in freight rates.

For reasons which are hereafter considered, the carriers are not seeking to obtain the proposed increases in freight revenue by increases in the rates on all traffic carried by them, the so-called classes and certain of the commodities being selected to bear the increase. The questions which are therefore presented to the Commission for consideration are two: (1) whether the carriers in official classification territory generally may justly add to their revenues

through the proposed increases in rates, and (2) whether the discretion of the carriers in selecting the so-called classes and certain commodities to bear the advances was reasonably exercised.

The first of these questions will be dealt with on behalf of a number of the companies in separate briefs. Some general observations are here submitted.

I.

PROPRIETY OF A GENERAL ADVANCE.

It will not, we assume, be questioned that operating cost should be regarded as a material factor in determining the reasonableness of a schedule of rates. Unquestionably as a result of the increase in wages the cost to the carriers of transporting their freight traffic has been increased. The whole increase in wages is an actual addition to operating cost as it was based not on any increase in the efficiency of wage earners, but solely on the increased cost of living.

Since the earnings expected to be derived from the proposed increases in freight rates are, estimated upon the basis described, approximately \$7,000,000 less than the aggregate wage increase, it is apparent that the addition to operating cost amounts to \$7,000,000 more than the additional revenue to be expected from the rates in question.

The structure of rates throughout official classification territory under which these carriers operated at the time these increases in wages were made, was concededly not too high. It was, in the opinion of many railroad men, too

low. But, whether that be true or not, the free movement of traffic and the increasing prosperity of this territory under these rates, and the practically universal acquiescence of the public in their reasonableness, indicate clearly that the rates, from the standpoint of the public, were not too high.

In these circumstances the increase in operating expenses furnishes a *prima facie* justification for the proposed increase in rates, and certainly warrants, and indeed requires the allowance of the advance, unless other conditions have been disclosed by the evidence which should impel this Commission to the conclusion that the feature of increased operating cost ought to be disregarded or ignored.

It is urged by those objecting to the proposed advances that they are not necessary, because in their opinion the earnings of the companies concerned have been and now are sufficiently great to enable them to absorb the increased outlay on account of wages to which they are now subject, without injustice to them. Considering this objection, has it been made to appear that the present basis of rates is so remunerative as to justify the Commission in treating as negligible the large additions to the operating outlay of the companies, resulting from recent increases in operating expenses?

In considering this and any like objection which is rested upon the proposition that this Commission should declare rates to be unreasonably high, not because they have been shown to be such in themselves, but because they are yielding, due to the volume and character of traffic transported thereunder, large revenues to carriers, it may

not be amiss to recall what was said by one of the great Chancellors of England in dealing with an argument of the same character, in a case in which the question involved related to the reasonableness of tolls established by a certain Bridge Company.

"It certainly appears to their Lordships," said Lord Chancellor Selborne in the case of Canada Southern Ry. Co. vs. International Bridge Co., 8 App. Cases, 731, "that the principle must be, when reasonableness comes in question, not what profit it may be reasonable for a company to make, but what it is reasonable to charge to the person who is charged. That is the only thing he is concerned with. They do not say that the case may not be imagined of the results to a company being so enormously disproportionate to the money laid out upon the undertaking as to make that of itself possibly some evidence that the charge is unreasonable, with reference to the person against whom it is charged. But that is merely imaginary. Here we have got a perfectly reasonable scale of charges in everything which is to be regarded as material to the person against whom the charge is made. One of their Lordships asked Counsel at the bar to point out which of these charges were unreasonable. It was not found possible to do so. In point of fact, every one of them seems to be, when examined with reference to the service rendered and the benefit to the person receiving that service, perfectly unexceptionable, according to any standard of reasonableness which can be suggested. That being so, it seems to their Lordships that it would be a very extraordinary thing, indeed, unless the Legislature had expressly said so, to hold that the person using the bridge could claim a right to take the whole accounts of the company, to dissect their capital account, and to dissect their income account, to allow this item and disallow that, and, after, manipulating the accounts in their own way, to ask a Court to say that the persons who have projected such an undertaking as this, who have encountered all the original risks of executing

it, who are still subject to the risks which from natural and other causes every such undertaking is subject to, and who may possibly, as in the case alluded to by the learned Judge in the Court below, the case of the Tay Bridge, have the whole thing swept away in a moment, are to be regarded as making unreasonable charges, not because it is otherwise than fair for the railway company using the bridge to pay those charges, but because the bridge company gets a dividend which is alleged to amount, at the utmost, to 15 per cent. Their Lordships can hardly characterize that argument as anything less than preposterous."

PRESENT RETURNS TO INVESTORS NOT EXCESSIVE.

Certainly, in the present proceeding, no one has even attempted to show that the rates which are now sought to be advanced have been in any respect unreasonable, and what was said by Lord Selborne in the case just alluded to has accordingly a very direct application to the present case. But waiving this consideration, what basis exists for any contention that the present rates are yielding the carriers net revenues so large that a reduction of \$34,000,000 can be made in those revenues without injustice to the carriers or their stockholders?

So far as the position of the objectors to the advances has been indicated by what has already transpired before this Commission, it would seem that their argument upon this point will be rested solely upon the proposition that the companies have been receiving \$34,000,000 a year or more in excess of an amount which should be regarded as fair and proper.

The companies whose rates are now under consideration are, as a whole, embraced in Groups 1, 2 and 3 of the territorial division adopted by this Commission in the prepara-

tion and promulgation of the statistics which it prepares and publishes each year. The statistics of the last year available, viz., that ending June 30, 1908, show that on that date, in round numbers, the total funded debt of the companies embraced in these three groups amounted to \$3,600,000,000 and the capital stock to \$2,800,000,000.

The interest on the funded debt amounted to \$142,000,000, a little less than 4% on the amount of the debt, and the dividends paid in the year in question out of the income of the year amounted to \$114,000,000, or a little more than 4% on the amount of the capital stock.

Certainly these figures do not tend in the remotest degree to justify the claim that these companies derived earnings during the year in question which were excessive considered with reference to the return which they enabled the companies to make to the holders of their bonds and stock.

And in this connection it may not be amiss to direct the attention of the commission to the fact that \$34,000,000, the amount of the wage increase, based upon the figures of 1909, is more than 30% of the total sum paid as above in dividends.

NECESSITY FOR SURPLUS.

But it will be urged that the payments which the railroad companies have made to their bondholders and to their stockholders have not absorbed all their net earnings, but that a surplus has remained, and it will doubtless be claimed that this surplus has been large enough to permit a drain of \$34,000,000, without any excessive impairment of the companies' earnings. It is, of course, true that the companies, as a whole, have not distributed all of their earnings among their stockholders, and that

they have had left after payment of the moderate dividends which the stockholders have received, a surplus, but that this surplus should not be reduced or depleted in the manner proposed is a conclusion or proposition to which we trust this Commission will give its adherence.

The surplus earnings which have remained over and above the payment of dividends have been used by the companies in improving their properties. They have also constituted a basis of credit which has enabled the companies to secure from investors the large amounts of capital which have been expended in the improvement and extension of their facilities to meet the demands of the public who are to-day insisting upon a service of a better and more expensive character than they have been content with in the past.

The extent to which it has been found necessary to procure funds through increased capitalization for improvements and additions is sufficiently indicated by the increase in capitalization during the five years between June 30, 1903, and June 30, 1908, of the companies embraced in Groups 1, 2 and 3 of the Commission's Territorial Division. This increase amounted to \$1,600,000,000. That notwithstanding this large increase, the improvement and development of the railroads failed to keep pace with the transportation demands upon them was shown by their inability to handle in the year 1907 the volume of traffic then offering. As a consequence the companies have since been and are now confronted with the necessity of continuing to make expenditures of the same character not merely to keep pace with the present and future growth of the country, but to make up for inadequate expendi-

tures in the past. As a further consequence it is almost inevitable that their future expenditures will largely exceed those of the past. Under these circumstances it is submitted that it is not wise nor expedient having regard to the interest, not merely of the companies or of their stockholders, but of the public, of which the shippers form a part, that the revenues of the companies available for use in connection with improvements and additions should be largely curtailed, and that their ability to make these improvements and additions should be to any extent whatever impaired by a reduction in rates—for to keep rates stationary while operating cost advances is tantamount to a reduction in rates.

The reduction or curtailment of these surplus earnings would have a still more serious effect than the mere loss of so many millions of dollars. As will of course be conceded the companies will have to secure much the greater part of the amount required for future improvements to their properties, and for the increase of their facilities, through sales of bonds or increases of their stock.

But to secure the requisite amounts in this manner, investors will have to be satisfied that the companies will be able to make a reasonable return in the shape of interest or dividends upon the amounts which they will thus seek to secure. It is wholly unreasonable to expect that investors be willing to loan to companies, much less invest large sums in their capital stock, if the companies seeking to secure the money are not showing a surplus over the interest and dividends on their existing bonds and stock and over those expenditures which it is reasonable to expect railroad companies to take care of

out of their income. Moreover this surplus must be sufficiently large to assure investors that the companies can take care of the additional charges—either interest or dividend—to which they will become subject. The public policy of this country in these latter days is clearly opposed, if we are to be governed by the legislation which has been enacted, to the issue of securities at any considerable discount, and if this is to be the controlling rule in the future, it is apparent that to enable securities to be sold on such a basis, the rates of the railroad companies must be such as to enable them to show a very considerable earning power in excess of their absolute requirements.

The public interest will, we submit, be subserved by a rate adjustment which will furnish this margin of safety, thus enabling the railroad companies to so maintain and strengthen their credit as to enable them to secure additional capital on favorable terms, and at the same time to improve their properties by the expenditure of surplus earnings thereon.

This has been done in the past and the shippers of to-day are reaping the benefit, for if all expenditures of the railroad companies in the past had been capitalized, the rates of to-day would necessarily be on a materially higher plane. Is there anything unfair to these shippers in a continuance of this policy?

It would be most unwise to close our eyes to the effect of any decision of this Commission which should prescribe as the governing rule that rates of railroad companies must be regarded as excessive if the effect of these rates is to secure for the companies earnings in excess of the amounts required for the ordinary operating expenses

of their roads, the payment of interest and of moderate or even fair dividends. If the companies which are to-day regarded as among the strongest should have their earnings reduced to a figure which would yield their stockholders 6 or even 7%, but would leave no surplus, and it was clearly understood by investors that if, as a result of the growth of the company's business a considerable surplus was shown, this would be regarded as evidence of excessive rates, and there would follow an enforced reduction of rates, either directly or through the imposition of greater burdens of operating cost, is it conceivable that new capital could be secured on anything like reasonable terms? Further, it must be remembered that the relation of rates in the territory between the Atlantic seaboard and the Mississippi River, and the competitive relations as between shippers and carriers are such that the same rates must be maintained via all routes, between all important points. A system of rates which would reduce earnings of the stronger lines to 6% or 7% per annum, with no surplus for proper corporate purposes, would throw into insolvency all carriers except those having the most favorable location, and operating under circumstances of the greatest advantage.

The executive officers of several of the companies have testified in this proceeding that, in their judgment, substantial surplus earnings are necessary in order to maintain the credit of their companies and thus enable them to secure the additional funds which they must obtain in the future if the country's transportation needs are to be met and served by them. What is there that should induce this Commission to question or to dissent from the conclu-

sion expressed by these officers as to the paramount importance to the credit of their companies of surplus earnings well in excess of dividend requirements? No witness who has been called has ventured to express a contrary view, and it would be, we fear, disastrous if the judgment of these executive officers, supported as it is by reasons which, we submit, must appeal to all, were disregarded and a policy inaugurated different from that which has been pursued in the past upon the chance that it will do no harm. This chance is too great a one to take in view of the unfortunate result that would follow if it should turn out that the judgment of these executive officers was well founded.

NO ASSURANCE OF SURPLUS WITHOUT ADVANCE IN RATES.

But it will probably be urged that the gross earnings of the companies will increase to such an extent in the future as to take care of any increased operating cost and capital charges, and to provide an adequate surplus. Doubtless there will be increases in the gross earnings of the companies in the years to come. How considerable these increases will be and how great will be the net earnings that will be derived therefrom cannot be forecast with certainty.

But if we are to base our estimates upon the results of the operations of the railroad companies as a whole in the last six months the statistics of which are available—and we certainly have no surer guide for the future than these—it is very problematical, to say the least, whether any appreciable increase of net earnings will be derived

from increases in gross earnings, no matter how large these may be.

That we are justified in this statement, we think it must be conceded, when the results of the operations of the months to which we have referred are considered.

These results are set forth in the twenty-fourth annual report of this Commission, which contains summaries of the monthly reports of the railroad companies of the country for the years ending June 30, 1909, and June 30, 1910, and of the first three months of the years ending June 30, 1910, and June 30, 1911.

It appears from these summaries that in the nine months preceding April 1, 1910, the gross operating revenues of the companies amounted to \$2,088,288,000, which was an increase over the corresponding months of 1909, of \$252,000,000, while in the six months following April 1, 1910, the gross operating revenues amounted to \$1,444,112,000, an increase over the six months following April 1, 1909, of \$131,000,000.

In the earlier period, as shown by these summaries, the net operating income of the companies increased \$90,000,000, equal to 36% of the increase in gross revenue, while in the later period, notwithstanding an increase in gross revenue of \$131,000,000, the net operating income decreased \$6,000,000.

If, as thus appears, an increase in gross operating revenues of \$131,000,000 was accompanied with a loss in the net income of \$6,000,000, who can say whether a further increase of \$100,000,000 in gross income would have resulted in an increase in net income, or in a still further decrease, and if this be true is it safe, or indeed permissible, in dealing with the rates of these companies to disre-

gard the actual results of operations for six months under the present conditions, and in fixing the rates to do so upon the theory that perhaps further increases in gross revenue will be secured in the future, and perhaps—if this should prove to be the case—there will be increases in net income?

But the shrinkage of \$6,000,000 in net income in the six months following April 1, 1910, does not tell the whole story. We have not the figures available which will show the increases in capitalization, and consequent increases in capital charges which came about in the year preceding these six months. Certain it is, however, that an increase of \$131,000,000 in gross earnings was not secured without material additions to the capital account, and to the extent to which the companies' capital charges were increased in this year, to that extent are the results for the six months more disadvantageous to them.

We do know that in the year ending June 30, 1909, the capitalization of the railroad companies of the country increased to the extent of about \$700,000,000, and if a similar increase occurred in the year ending June 30, 1910, it can readily be seen how serious has been the effect upon the railroad companies of the higher operating cost to which they are now subject.

II.

PROPRIETY OF INCIDENCE OF PROPOSED ADVANCE.

The next question to be considered is whether the discretion of the carriers in selecting the so-called classes and certain commodities to bear the advances was reasonably exercised.

The principal sources of the revenues of the carriers are freight, passenger, mail and express traffic. No attempt has been made to increase passenger rates except in the case of the commutation rates between New York City and suburban points, and certain local rates in New England. The commutation rates are under separate investigation by this Commission, and the State Commissions of New York and New Jersey. The reason, generally speaking, for not proposing increases in passenger rates is that as a result of well-known conditions affecting passenger traffic, the railroads are practically limited to fixed rates per mile, irrespective of the cost of service.

The rates upon mail traffic constituting an important source of revenue to some of the carriers are fixed by the Government and cannot be increased except by changes in statutes or departmental regulations.

Express rates are, as is thoroughly understood, published by the express companies and the earnings of the railroads result from contracts with the express companies for the carriage of their traffic.

The carriers were therefore practically restricted to freight traffic as the means of securing increased revenue, and in dealing with that traffic they were confronted by the fact that in the case of some very important commodities involving large tonnage, rates had in recent years been increased concurrently with increased cost of operation. In other instances competitive conditions as between carriers or as between localities made increases impracticable. Where these conditions did not obtain, increases were proposed. The carriers have proposed advances in rates upon many thousand articles of commerce which have not here-

tofore borne advances concurrently with increases in the cost of operation; articles which in the opinion of the traffic officials of the carriers could sustain the advances without restricting the free movement of these articles in the commerce of the country.

These many thousand articles of commerce fall principally within the six classes of the official classification, although a large percentage of the articles carrying commodity rates have also been advanced. A brief survey of the history and general structure of the official classification will establish the proposition that the articles governed by the so-called class rates have not heretofore borne their fair share of increased operating cost. And a similar survey of commodity rates shows either, (a) that they have not heretofore borne advances concurrently with the increased cost of operation and are therefore proposed to be increased; or (b) that they have been advanced in previous years concurrently with increases in cost of operation and therefore ought not to be advanced now, or (c) that competitive conditions as between carriers or localities prevent advances.

THE OFFICIAL CLASSIFICATION.

Prior to the enactment of the Interstate Commerce Act in 1887, there were numerous classifications of freight applying upon articles transported in the territory now known as official classification territory, comprising the territory which, broadly speaking, lies between the Atlantic seaboard and the Mississippi River north of the Potomac and Ohio Rivers. Various provisions of the Interstate Commerce Act, and particularly the long and

short haul provision of section 4, made it necessary that there should be a uniform classification in the territory above described, and in that year the present classification was adopted. Articles of commerce carried under then existing classifications were divided into six classes, and distributed to the different classes according to the well-known principles of classification, among which the most important are, the value of the article, its weight, bulk, liability to loss and damage and the commercial conditions attending its transportation.

Theoretically the official classification at that time, and ever since, has provided ratings upon all articles of commerce with a few exceptions, among which the most important are coal, coke, iron ore, live stock and fresh milk and cream; but at that time, or since, a considerable number of articles, approximately two hundred in the west-bound commodity tariffs, have been provided with special ratings known as commodity ratings.

The total number of ratings in the official classification at the present time is approximately ten thousand, of which approximately six thousand are less-than-carload ratings. Upwards of 70% of the articles which have less-than-carload ratings also have carload ratings, so that there is to that extent a duplication of articles of commerce. On the other hand many of the ratings are generic in character and cover a number of distinct articles of commerce, so that there are doubtless more than ten thousand different articles of commerce which fall within some one of the six classes of the official classification. The official classification has always broadly distinguished between carload and

less-than-carload ratings, because of the more valuable and expensive service performed upon the less-than-carload business. Carload freight is loaded by the shipper and unloaded by the consignee from public team tracks and private sidings, while less-than-carload freight is loaded and unloaded by the railroad company through freight stations and terminals, often very expensive and involving the maintenance of large station forces. The first three classes are broadly distinguished for the number of less-than-carload ratings, there being in those three classes, and rules 25 and 26, which are percentage applications of those classes, about forty-five hundred of the six thousand less-than-carload ratings in the official classification; while in those same classes there are approximately seven hundred carload ratings as compared with more than four thousand carload ratings in the entire classification.

CHANGES IN CLASSIFICATION HAVE RESULTED IN A
REDUCTION IN RATES.

While the general structure of the official classification and the rates applying to the particular classes have remained unchanged since 1887, there have been some changes in classification effected by transferring articles from one class to another, which have affected the transportation rates. Generally speaking, the tendency of these changes in classification has been downward. Only in one instance has there been a systematic effort on the part of the carriers to increase revenues through increases in classification. That occurred in 1900. At that time

the carriers through the publication of official classification No. 20 made effective the following increases:

NO. OF RATINGS ADVANCED.	FROM CLASS	TO CLASS	PER CENT. INCREASE ON BASIS N. Y. TO CHICAGO RATES.
294	4th	3rd	42.8
166	3rd	2nd	30
66	6th	5th	20
1	2½ T1	3 T1	20
24	2nd	1st	15.3
15	5th	4th	16.6
4	1st	1½ T1	50
5	1st	D1	100
1	D1	2½ T1	25
3	1½ T1	D1	33.3
1	4th	2nd	85.7
3	3rd	1st	50

Total number of ratings advanced, 583.

It may be observed that the statement above of the number of ratings changed in this classification, 583, differs from the analysis made by the Interstate Commerce Commission in its annual report for the year 1900, which shows 818 advances. The figures here given are the result of a careful analysis of official classification No. 20, made under the direction of counsel, and are submitted to the Commission in the belief that they are accurate. In describing the ratings which were advanced in official classification No. 20, there were 481 specifications used to classify under separate headings 221 ratings. It follows that there were 260 duplications in the enumeration of the ratings which were advanced. It is believed that a large number of these duplications must have been overlooked in the calculation prepared under the direction of the Commission.

In computing this average percentage of increase resulting from changes in classification, due weight was given to the number of items subjected to the various advances, but the variation in the tonnage moving under, and the revenue derived from the various classes was ignored. While it was necessarily ignored because of the absence of data, from which its extent could be obtained, it is nevertheless an important factor which must be known before such average is made a basis for any conclusion.

As the result of an investigation conducted by the Commission, a supplement to official classification No. 20, of January 1st, 1900, was made effective on March 10, 1900. Important reductions were made in this supplement. Of the 294 ratings which had been advanced from fourth class to third class, 293 were reduced to 20% less than third class. The effect of this reduction was to reduce the increase on these articles on the basis of the New York-Chicago scale from 42.8% to 14.3%. The increase amounted to 5c. per 100 lbs. between New York and Chicago. This increase as applied to intermediate rates was lessened as distance decreased, until by the operation of the rule providing for a 20% reduction from third-class, no increase resulted in rates for short distances.

The 166 articles which were advanced on January 1st, 1900, from third to second class, an increase of 30%, were reduced on March 10, 1900, to 15% less than second class, making the net increase over the rates in effect prior to January 1, 1900, 10%. On the New York-Chicago basis the increase was 5c. per 100 lbs. This increase as applied to intermediate rates was lessened as distance decreased, until by the operation of the rule providing for a 15%

reduction from second class, no increase resulted in rates for short distances.

The increases in the rates as they were finally made effective on March 10, 1900, and the percentages on the New York-Chicago scale were as follows:

NO. OF RATINGS CHANGED.	FROM CLASS	TO CLASS	NET P. C. IN- CREASE ON BASIS N. Y. to CHICAGO RATES.
1	4th	3rd	42.8
293	4th	20 % less than 3rd	14.3
168	3rd	15 % less than 2nd	10
66	6th	5th	20
1	2½T1	3T1	20
24	2nd	1st	15.3
15	5th	4th	16.6
4	1st	1½T1	50
5	1st	D1	100
1	D1	2½T1	25
3	1½T1	D1	33.3
1	4th	2nd	85.7
3	3rd	1st	50

Bearing in mind the inaccuracy of any average percentage of increase computed according to the method used in the statement prepared for the Commission, and making use of it here only for purposes of comparison, it may be noted that instead of being 21.2%, as estimated by the Commission, it is only 15.2%.

In this connection it has been pointed out that by virtue of the operation of the percentage rules established in the reduction from second and third classes, in many instances no increases in rates were made for short distances, the effect of which was to reduce as a general

proposition any percentage based upon the New York-Chicago scale.

A careful analysis of the official classifications of 1898 and 1908 was made by Mr. C. C. McCain, Chairman of the Trunk Line Association, and its results are found in his pamphlet entitled "Diminished Purchasing Power of Railway Earnings," introduced as an exhibit in connection with his testimony. Mr. McCain shows that between 1898 and 1908 (which period, it will be noted, includes the advances made in 1900) there were 638 advances and 296 reductions in the classification of articles carried in less-than-carload quantities. Assuming the shipment of one hundred pounds of each of these articles from New York to Chicago, the 296 reductions produced reductions in revenue of \$71.35, while the 638 advances produced increases in revenue of \$69.97.

In the carload ratings there were in the same period 580 reductions and 259 advances. Assuming the shipment of one hundred pounds of articles covered by each of the ratings which were reduced, they produced reductions in revenue of \$129.72½, while the advances produced increases in revenue of \$27.05.

It appears from these figures that during the period between 1898 and 1908 the fluctuations in the less-than-carload ratings have substantially cancelled each other, there being a slight downward tendency, while on the other hand there was a very large reduction in the carload ratings.

Mr. McCain's comparisons of the classifications of 1888 and 1908 show still greater reductions through changes in classifications. There were 526 increases in less-than-

carload ratings, upon which the increase in the aggregate charge for one hundred pounds of each of all the commodities increased if shipped from New York to Chicago was \$89.00; there were 387 reductions in less-than-carload ratings, upon which the decrease in the aggregate charge for one hundred pounds of each of all articles decreased if shipped from New York to Chicago, was \$105.90; the net decrease being \$26.90.

The number of carload ratings increased from 1888 to 1908 was 228 upon which the increase in the aggregate charge for one hundred pounds of each of all articles increased if shipped from New York to Chicago was \$25.65. The number of carload ratings decreased in the same period was 684, upon which the decrease in the aggregate charge for one hundred pounds of each of all articles decreased if shipped from New York to Chicago was \$205.02½.

The deduction from the history of the classification during the period of 23 years is that there has been a general downward tendency in both carload and less-than-carload ratings, which was only partially arrested by advances made by the carriers in 1900, while the six classes in the official classification have carried the same rates since 1887. Changes in classification have resulted in reductions in rates as compared with the classification and ratings as they were established in 1887.

TARIFFS ONLY PROPER BASIS FOR STUDY OF RATE HISTORY.

It may be said that the tables prepared by Mr. McCain deal with published rates, and do not reflect rates actually paid because of the allowance of rebates. This is cer-

tainly true to some extent prior to the enactment of the Elkins Act in 1903, but it is impossible to ascertain the extent to which the nominal rates exceeded the rates actually paid. It appears in the testimony of the representatives of the shippers that large shippers received rebates as high as 40% upon the traffic carried under the higher class rates, and it was suggested that these rebates were graduated down to the smaller shippers according to the volume of their business. There is no evidence that this was true as a general proposition, and on the other hand it is more than probable that generally the small shipper received no rebate. Speculation as to the extent of the practice throws no light upon the present controversy, and the subject is mentioned here only because the representatives of large shippers laid so much stress upon an alleged increase of the rates which they paid through the abolition of rebates. Whatever may be the exact fact as to the extent of the practice or the number of its beneficiaries, the only reliable evidence to which we can turn is to the general tendency of the rates throughout official classification territory as shown in the published classifications and tariffs.

COMMODITY RATES HERETOFORE ADVANCED.

While the class rates have not been advanced since 1887, important advances in commodity rates carrying a very large volume of tonnage have been made in recent years. Other commodity rates are now proposed to be advanced. It appeared in the testimony of Vice-President Thayer and others that in 1903 and 1907 when large increases in operating expenses were incurred, principally through increases in wages, advances in commodity rates were made.

In January, 1903, advances were made in commodity rates on pig iron, billets and other iron articles, manufactured iron and steel articles, various ores, together with a number of miscellaneous commodities. The advance on pig iron was from \$4.20 per gross ton, between New York and Chicago, to \$4.62, an advance of 10%. The advance on billets and other similar articles was from \$4.50 per gross ton to \$4.95, also 10%. The increase on manufactured iron and steel articles was from 25 to 27½c., carloads, and 30 to 33c., less-than-carloads, also 10%. The advances generally made at this time were approximately 10% upon the commodities affected. No statistics of the movement of tonnage under these particular ratings are available, but it is certain from the well-known facts as to the movement of tonnage under these rates that the advances produced large increases in revenue.

At the same time advances were made in east-bound commodity rates upon packing-house products, dressed meats and grain and grain products.

The advances on iron articles, packing-house products, dressed meats, and grain and grain products were made the subject of an investigation by the Interstate Commerce Commission, which is reported in 9 I. C. C. 382. The advances on iron articles, packing-house products and dressed meats were sustained, while the advance in the domestic rate on grain and grain products of 17½ to 20c., Chicago to New York, was condemned.

In connection with the advance in 1903 on iron and steel articles, it should be pointed out that Mr. Barlow's statement as to the changes in the rates from Pittsburgh to Chicago, based upon information furnished by the

Tariff Bureau of the Interstate Commerce Commission, is inaccurate. Mr. Barlow stated that on January 1st, 1903, the rate from Pittsburgh to Chicago was reduced to 16½c. per 100 lbs. The facts are that this change was an advance from a rate of 15c. per 100 lbs. which had been in effect from February 1st, 1901, to December 31st, 1902. Prior to February 1st, 1901, the rate was 18c. per 100 lbs., and the inaccuracy is due to the failure to note the intervening rate. On June 1st, 1907, the rate was advanced from 16½c. to 18c. per 100 lbs. Other advances were made on pig iron, billets, and iron and steel articles in 1907, when advances in other commodity rates were also made. It will be convenient here, although it involves some repetition, to show the advances in 1903 and 1907 in the basing rates on iron and steel articles between New York and Chicago, Pittsburgh and Chicago, and Pittsburgh and New York.

NEW YORK AND CHICAGO.

	PIG IRON (GROSS TON).	BILLETS, ETC. (GROSS TON).	IRON & STEEL ARTICLES C. L. (PER 100 LBS.)
Jan. 1, 1903.	42c.	45c.	2½c.
June 1, 1907.	13c.	5c.	2½c.

PITTSBURGH AND CHICAGO.

	PIG IRON (GROSS TON).	BILLETS, ETC. (GROSS TON).	IRON & STEEL ARTICLES C. L. (PER 100 LBS.)
Jan. 1, 1903.	20c.	30c.	1½c.
June 1, 1907.	10c.	—	1½c.

PITTSBURGH AND NEW YORK.

	PIG IRON (GROSS TON).	BILLETS, ETC. (GROSS TON).	IRON & STEEL ARTICLES C. L. (PER 100 LBS.)
Jan. 1, 1903.	20c.	20c.	1½c.
June 1, 1907.	5c.	—	1½c.

In addition to the advances on iron and manufactured iron and steel articles, made on June 1, 1907, advances were made in about fifty westbound commodity rates.

On April 1st, 1903, the rates on bituminous coal eastbound from the Pennsylvania and West Virginia fields were generally advanced 10c. per ton. In May, 1907, another general advance in the eastbound bituminous coal rates of 5c. per ton was made from the same territory. At the opening of navigation in 1907 the lake cargo coal rate was advanced 5c. per ton from all Pennsylvania, Ohio and West Virginia districts. On January 1st, 1903, the rates on coke eastbound from Pennsylvania and Virginia territory were generally advanced 10c. per ton, and on July 1st, 1907, another general advance of 10c. per ton was made in the coke rates from the same territory. The coke rates westbound were also advanced on January 1st, 1903, generally, 10c. and 15c. per ton, and on July 1st, 1907, a further advance of 5c. per ton to Western Pennsylvania and northern Ohio points was made.

In May, 1907, the rates on grain and grain products from Central Freight Association territory were advanced from 17½c. to 19½c. per 100 lbs. on the Chicago-New York scale. On February 1, 1910, these rates were again advanced: on grain from 19½c. to 20c., and on grain products from 19½c. to 20½c. Chicago to New York.

On April 22, 1907, the ex-lake rates on grain for domestic consumption from Buffalo to New York were advanced from 5c. to 6c. per bushel on wheat, and on May 1st, 1908, the rate was again advanced to 6½c. per bushel, with corresponding advances on both dates in rates on corn, rye, barley, oats and flaxseed. On September 20,

1906, the rates on ex-lake grain for export were advanced from $4\frac{1}{2}$ c. per bushel to 5c. on wheat, with related advances on corn, rye, barley, oats and flaxseed. A further advance in the export rate was made on April 15th, 1907, on the basis of an increase of $\frac{1}{2}$ c. per bushel in the rate on wheat.

In August, 1908, the rates on coffee were advanced from 27c. to 30c. per 100 lbs., on the basis of New York to Chicago. On the same date the rates on sugar were advanced from 26c. to 28c., on the basis of New York to Chicago. The tonnage on these two commodities shipped from New York, Boston and Philadelphia is approximately 40% of the entire westbound tonnage from those cities to points west of the western termini of the trunk lines. These advances were investigated by the Commission in the case of the Indianapolis Freight Bureau *vs.* Pennsylvania Railroad, *et al.*, 15 I. C. C. 567. The Commission found that the rates on sugar from Atlantic seaboard points to St. Louis and Ohio River crossings were controlled by the rates from New Orleans, which in turn were governed by water competition. It also appeared that a competitive relationship existed between the rates on coffee from Atlantic seaboard points to Ohio and Mississippi crossings, and rates on coffee from New Orleans to the same points. At the time of the advances on August 1st, 1908, and prior thereto, the sugar rate carried an allowance of 2c. per 100 lbs. for transfer from refineries to cars, leaving the net rate prior to the advance 24c., and subsequent thereto 26c. When the transfer allowance was discontinued in 1909 the gross rate of 28c.

was reduced to a net rate of 26c., leaving a net advance over the rate effective prior to August 1, 1908, of 2c.

While, as it thus appears, sugar and coffee have been recently advanced, it is conceded that a further advance might properly have been made had the competitive conditions, as between New York, Philadelphia and Boston, on the one hand, and New Orleans, on the other, permitted it.

No advance in rates on paper from New England and Northern New York producing points to Chicago, Milwaukee, St. Louis and other points in C.F.A. territory has been proposed, because of the existence of low competitive rates on like traffic from large producing points in Wisconsin and Minnesota to same points of destination.

Brick is a commodity of very large tonnage upon which no advance was practicable, for reasons which fully appear from the report of the Interstate Commerce Commission in the case of the Metropolitan Paving Brick Company *et al.* *vs.* Ann Arbor R.R. Co. *et al.*, 17 I. C. C. 197. In that case as a result of complaints of alleged discrimination in the classification of different kinds of brick, and the application of different rates thereto, as well as complaints of the unreasonableness of the rates in themselves, the Interstate Commerce Commission fixed the maximum rate upon brick from Central Freight Association territory to Trunk Line territory on the basis of 21c. per 100 lbs., Chicago to New York. The order establishing this scale of rates is still effective.

It thus appears from the review of the most important changes in commodity rates in recent years that coal, coke, pig iron, billets, blooms, etc., and manufactured

iron and steel articles, grain and grain products, sugar, coffee and other commodities constituting a tonnage of great magnitude, have been increased since January 1st, 1903, concurrently with large increases in operating expenses which have occurred at or since that time. No statistics are available showing the precise tonnage affected by these increases in rates. But as indicative of the amount of revenue involved, reference may be made to the testimony of Vice-President Thayer, of the Pennsylvania, who stated that the advances of 1903 produced several million dollars annually to the Pennsylvania Railroad, and that the advances of 1907, brought to that company a great deal more money than the proposed advances can possibly bring; in other words, much more than \$3,000,000 annually.

ADVANCE IN CLASS RATES NOW PROPOSED.

It appears from the foregoing history of the rates that the situation which confronts the carriers in official classification territory at this time, when they seek advances in freight rates to reimburse them for increases in expenses, is that the rates upon the six classes have remained unchanged for a period of twenty-three years, except as changes in rates have been effected by changes in classification, and that the general tendency of these changes has been downward; or, if a concession be made which the facts do not require, the tendency has at most not been upward. On the other hand, in recent years, important increases have been made in commodity rates affecting a very large tonnage and producing amounts of revenue which, to the carriers in official classification territory, were probably

larger than those sought to be secured by the proposed increases in rates. It seems obvious, therefore, that increases in revenue should be sought upon the articles carried under class rates which have not heretofore borne advances, and, where competitive or commercial conditions will permit, upon commodities not heretofore advanced at all or advanced so little that further increases are justifiable.

Accordingly the carriers have proposed to advance the rates upon the six classes from the basis of 1887 as follows:

	1st	2nd	3rd	4th	5th	6th
Present rates.....	75	65	50	35	30	25
Proposed rates.....	90	78	60	40	33	27
Increase....	15	13	10	5	3	2

They have also proposed to make advances in approximately 80 basing commodity rates between New York and Chicago, which include in some instances commodities upon which advances have been made in recent years, and in other instances commodities upon which advances have not been made.

PROPOSED INCREASES SHOULD NOT BE JUDGED BY PERCENTAGE STUDY.

It is well understood that class rates westbound from New York, Boston and Syracuse rate points to C. F. A. territory are certain established percentages of the New York-Chicago scale, and it is obvious that the percentage of increase in all such rates will be the same as the percentage of increase in the scale, except as it may depart

therefrom by the disposition of fractions in the computation. It must not be overlooked, however, that the class rates westbound from Philadelphia and Philadelphia rate points to C. F. A. points are respectively certain differentials namely 6, 6, 2, 2, 2, 2c. per cwt. under the class rates from New York to the same points. Also that the class rates westbound from Baltimore and Baltimore rate points to C. F. A. points are respectively certain differentials namely 8, 8, 3, 3, 3, 3c. per cwt. under the class rates from New York to the same points. Also that from a considerable territory depending upon New York, Philadelphia and Baltimore rates, the rates to C. F. A. points are fixed arbitraries above the rates from New York, Philadelphia and Baltimore respectively. Moreover, rates from Albany and Albany rate points, Ogdensburg and Ogdensburg rate points to C. F. A. points are not established on basis of fixed percentages of New York-Chicago rates, nor are rates from a considerable territory east of Buffalo and Pittsburg based upon percentages of New York-Chicago rates. Again the class rates eastbound from C. F. A. territory to Philadelphia and Philadelphia rate points are differentials of 2, 2, 2, 2, 2, 2c. per cwt. less than rates from same points of origin to New York, and rates from said points to Baltimore and Baltimore rate points are differentials of 3, 3, 3, 3, 3, 3c. per cwt. less than rates from same points of origin to New York, and rates from C. F. A. territory to substantially all New England points taking Boston rates, are arbitraries of 7, 6, 5, 4, 3, 2c. per cwt. higher than rates from same points of origin to New York, all of these differ-

entials having heretofore received the approval of the Commission.

It thus appears that the percentage of increase of the New York-Chicago scale does not measure the percentage increase in the class rates between any point in C. F. A. territory on the one hand, and Trunk Line territory on the other, except those which are fixed strictly on percentage of New York-Chicago scale.

Dismissing now from consideration the western termini of Trunk Lines, it may be said that the rates between points in C. F. A. territory are not fixed percentages of the New York-Chicago scale. They are based, generally speaking, upon what is known as the C. F. A. minimum mileage scale, which does not progress in the different classes in any uniform percentage ratio as the mileage increases. Here again the percentage of increase resulting from the application of the proposed rates is not measured by the percentage of increase proposed for the New York-Chicago scale.

With respect to rates applying locally in Trunk Line territory, if we again omit from consideration the western termini of Trunk Lines, it is proper to state that the general fabric of rates is not based upon percentages of rates applying between New York and Chicago or to or from the Trunk Line western termini, and the gradation of classes is not fixed with reference to any percentage of the New York-Chicago rates, from which it follows that the percentage of increase in such rates resulting from the proposed rates bear no relation to the percentage increase of the New York-Chicago rates.

The following table is illustrative of the varying percentage increases in the first three classes:

FROM	TO	1	2	3
New York	Buffalo	23.1	24.2	21.4
Philadelphia	Detroit	20.7	22.2	21.6
Chicago	Boston	18.3	18.3	18.2
St. Louis	Boston	19.	18.9	18.1
Cincinnati	Boston	18.7	18.4	17.5
Detroit	Boston	17.5	18.6	18.2
Albany	Columbus O.	18.6	18.9	17.2
Albany	St. Louis	19.2	19.	18.4
Boston	Utica	13.1	12.1	12.
Boston	Syracuse	17.1	16.6	16.
Syracuse	Cincinnati	19.6	20.	16.1
Philadelphia	Syracuse	17.1	16.6	16.
New York	Albany	11.5	14.3	14.7
New York	Utica	18.1	17.9	13.

The percentages of increase on each of the classes as ascertained by the six-day studies of tonnage of the principal New York Central lines is as follows:

PER CENT. OF PROPOSED INCREASE IN REVENUE DERIVED FROM THE VARIOUS CLASSES OF AFFECTED TRAFFIC.

CLASSES.	N. Y. C. PER CENT.	L. S. & M. S. PER CENT.	M. C. PER CENT.	C. C. C. & ST. L. PER CENT.
1st	19.09	20.90	19.01	21.14
2nd	19.12	21.00	19.07	19.32
3rd	18.26	21.00	19.43	15.96
Rule 23	18.68	20.40	19.01	16.71
" 26	17.18	22.10	18.68	16.39
4th	14.86	5.20	18.35	13.14
5th	12.79	11.90	17.87	9.51
6th	12.10	12.50	17.61	10.00
Rule 28 .....	..	17.40	18.35	16.71
4 times 1st	16.37	24.10	19.52	36.05
3 " "	18.47	20.70	18.21	16.39
2½ " "	19.70	27.60	20.61	27.27
2 " "	17.67	22.40	19.30	20.06
1½ " "	18.07	21.50	19.11	23.67
1¼ " "	17.38	19.70	19.10	51.77
Minimum	17.68	19.80	18.77	18.50
Average all classes	16.28	16.94	18.64	15.19
Commodities	12.29	13.70	18.47	8.63
Aggregate affected traffic	15.22	16.80	18.60	12.83

RELATIVELY LARGER INCREASE ON FIRST THREE CLASSES IS JUSTIFIED.

The larger increases being upon the first three classes, it is important to note some of the considerations which justify the establishment of higher rates relatively upon those classes. As has been heretofore pointed out, the first three classes contain much the larger proportion of less-than-carload ratings, there being in those classes approximately 4,500 of the 6,000 less-than-carload ratings in the official classification. Less-

than-carload freight is loaded and unloaded by the carrier through freight stations, while carload freight is, with rare exceptions, loaded and unloaded by the shipper and consignee. Enormously valuable terminal facilities in such cities as New York and Chicago are maintained exclusively for the handling of less-than-carload traffic. The number of separate shipments in a single car is generally large, each shipment involving a separate transaction which must be attended to and accounted for in detail, irrespective of its volume. The average loading of less-than-carload shipments on the Pennsylvania Railroad in October, 1910, from New York to Chicago, was 15,489 pounds; Philadelphia to Chicago, 10,019 pounds; Baltimore to Chicago, 5,856 pounds, the average of three cities being 14,141 pounds. Taking this average and assuming the entire traffic to fall within the first three classes, and averaging a rate upon those classes at 63c., produces a revenue of \$88.20 per car. Fifth-class carload freight carrying a minimum of 30,000 pounds to the car would produce a minimum revenue, New York to Chicago, of \$90 per car. A carload of steel loading 80,000 pounds produces a revenue of \$128 from Pittsburgh to New York. A carload of wheat, ex-lake domestic, from Buffalo to New York, loading 72,000 pounds, produces a revenue of \$78.

It will be noted that the average loading between New York and Chicago, indicated by the statistics of the Pennsylvania Railroad for the month of October, 1910, is higher than the average loading of all less-than-carload traffic handled by that company. If shipments between New York and Buffalo be taken as fairly coincident with

the average loading of less-than-carload traffic, it follows that the revenue upon a carload composed equally of first, second and third class traffic under existing rates of 39, 33 and 28c., would be \$34.98. The revenue on a similar car under the proposed rates, New York to Buffalo, of 48, 41 and 34c., would be \$43.46. Applying the present rate of 11c. on flour from Buffalo to New York, and the carload minimum of 40,000 pounds, produces a revenue of \$44 per car. Applying the rate on manufactured iron, from Buffalo to New York, of 16c., and the carload minimum of 36,000 pounds, produces a revenue per car on that commodity of \$57.60. Applying the rate of \$1.85 per gross ton on coal from the Beech Creek district to Albany, a distance of approximately 400 miles, and the carload minimum of 30,000 pounds, produces a revenue of \$55 per car. It is, of course, well known that the carload minimum on this traffic is greatly exceeded in the average actual loading.

Further light is thrown upon the average loading of package freight by a study made by the Delaware & Hudson Company prior to the taking of the testimony in this case. Its introduction in the evidence was overlooked in the mass of statistics handled. The greater proportion of traffic on the Delaware & Hudson covered by class rates and moving on through rates is received at Mechanicsville, N. Y., and delivered to the western lines at Binghamton, N. Y. and Wilkes-Barre, Pa. Instructions were given to the agent at Mechanicsville to keep an accurate record for the eight days, from Monday, September 9th, to Monday, September 16th, 1910, both inclusive, of the makeup of all Binghamton and Wilkes-Barre trains leaving his station, giving for each car the number, initials,

destination, commodity loaded with, weight, through rate and total freight charges; also to show all merchandise cars re-classified at Mechanicsville, showing the number of waybills for freight in each car. After this data was received, such of it as covered shipments to Cleveland territory, to Cincinnati territory and to Chicago, was spread on a form prepared so as to show the weight and earnings for each car of, (1) L. C. L. package freight, (2) Carload freight at class rates and (3) carload freight at commodity rates.

When this data had been spread on the form in the manner described, footings were made to show the total weight and total earnings of each of the three classes of freight above described. The number of cars of freight of each class was divided into the total weight and total earnings of each class to arrive at the average weight and average earnings per car of each class. The total weight of each class was then divided into total earnings for each class to arrive at the average rate per hundred pounds for each class. The total number of cars of L. C. L. package freight was divided into the total number of waybills for L. C. L. package freight to arrive at the average number of waybills per car for these classes of freight. The results were as follows:

	WEIGHT			EARNINGS		
	L. C. L. Package Freight.	C. L. Class Rates.	C. L. Com- modity Rates.	L. C. L. Package Freight.	C. L. Class Rates.	C. L. Com- modity Rates.
To CHICAGO.						
Totals	302,483	228,970	446,140	\$1407.86	\$589.92	\$1043.36
Number of cars	28	6	9	28	6	9
Average weight per car ...	10,803	38,162	49,571	.....	.....	.....
Average earnings per car ..	.....	.....	.....	\$50.28	\$98.32	\$115.93
Average earnings per 100 lbs.	.....	.....	.....	0.4653	0.2577	0.2339
To CLEVELAND TERRITORY.						
Totals	179,762	159,580	907,940	\$609.63	\$360.17	\$1460.37
Number of cars	16	5	19	16	5	19
Average weight per car ...	11,235	31,916	47,786	.....	.....	.....
Average earnings per car ..	.....	.....	.....	\$38.10	\$72.03	\$76.86
Average earnings per 100 lbs.	.....	.....	.....	0.3391	0.2257	0.1608
To CINCINNATI TERRITORY.						
Totals	82,194	79,825	560,100	\$287.68	\$184.27	\$972.41
Number of cars	10	3	12	10	3	12
Average weight per car ...	8,219	26,608	46,675	.....	.....	.....
Average earnings per car ..	.....	.....	.....	\$28.77	\$61.42	\$81.03
Average earnings per 100 lbs.	.....	.....	.....	0.3500	0.2308	0.1736

Another justification for the larger increase on the first three classes, relating both to the cost of the service to the carrier and the increased value of the service to the shipper, is the increased speed with which it is carried. There is now on merchandise traffic a sixty hour service between New York and Chicago, which is maintained with great regularity, and which compares with a service taking 5, 6 or 7 days twenty years ago. At that time no attempt was made to secure an expedited service between the seaboard cities and western points other than Chicago, while at the present time such a service is maintained between the seaboard cities and points such as Albany, Syracuse, Watertown, Buffalo, Pittsburgh, Wheeling, Parkersburg, Columbus, Cleveland, Toledo, Indianapolis, St. Louis, Louisville and

similar points. While this expedited service as established was practically restricted to less-than-carload freight, it has since been extended to some classes of carload freight. The expedition and reliability of this service has enabled merchants, at the points where it is received, to order goods in smaller quantities, to dispense with warehouse facilities, and restrict the amount of capital required for the transaction of a given volume of business. In these important respects the increase in the value of the service is incalculable.

Mr. Barlow paid a tribute to the expedited service. He referred to the estimate of the Richmond Chamber of Commerce that the value of the products handled by the railroads was approximately \$22,000,000,000 per annum, and that if this volume of shipments was delayed a week a loss to the commerce of the country, estimating the carrying charge of the capital involved at 5%, would be \$20,000,000 per annum. He further stated that as the result of the organization of a fast merchandise service from Chicago to the southeast, the saving in time in the average shipment was substantially ten days. These facts, doubtless, indicate some of the reasons why Mr. Barlow omitted to state in his carefully prepared objections to the proposed rates that they exceeded the value of the service rendered.

Another most important consideration in determining the value of the service and the free movement of the traffic under the proposed rates is the value of the article as compared with the increase in the freight rate. A statistical statement on that subject appears in the record. A few illustrations are here given.

On a pair of wool blankets, first class, on which the wholesale price is \$5.00, and the retail price \$7.50, the proposed increase from New York to Chicago would be $\frac{1}{10}\%$ of the retail price. On denim, classified under Rule 25, the wholesale price is $11\frac{1}{2}$ c. per yard, the retail price 17c., the percentage of increase proposed is $\frac{23}{100}$ of 1% of the retail price. On calico, first class, the wholesale price is 5c. per yard, retail 7c., the percentage of increase to retail value is $\frac{28}{100}$ of 1%. Wilton carpet, first class, wholesale price per yard \$2.40, retail price \$3.00, percentage of increase to retail value $\frac{22}{100}$ of 1%. On different styles of shoes, first class, the wholesale price varying from \$1.22 to \$2.00, the retail price from \$1.75 to \$3.00, the percentage of increase to retail value varies from $\frac{1}{10}$ of 1% to $\frac{3}{10}$ of 1%. Men's hats, first class, various styles, on which the average price to jobbers is 70c., average retail price \$1.57, the percentage of increase is $\frac{1}{10}$ of 1%. On canned goods, less-than-carloads, Rule 26, average wholesale price \$1.94 per dozen, average retail price \$2.33 per dozen, percentage of increase to retail value $\frac{1}{2}\%$. On poultry, first class, from Chicago to New York, the proposed increase is 15c. per 100 lbs. as compared with a selling price at the point of shipment of \$11 to \$18 per 100 lbs.

ESTABLISHED DIFFERENTIALS PRESERVED FOR WATER ROUTES.

In the foregoing we have considered the proposed increases in the standard all-rail rates. The differential rail-and-lake and ocean-and-rail-rates remain to be considered. One of the objections to the proposed advances most frequently reiterated by representatives of the shippers is

that the proposed increase in the rail-and-lake and ocean-and-rail-rates is a larger percentage of the existing rail-and-lake rates than the percentage increase of the standard all-rail rates proposed. This results from the fact that the existing rail-and-lake differentials in cents per 100 lbs. have been maintained. For illustration, the present rail-and-lake and ocean-and-rail rates are as follows:

	CLASSES.					
	1	2	3	4	5	6
Rail-and-Lake.....	62	54	41	30	25	21
Ocean-and-Rail.....	65	57	44	31	26	22

and they are increased precisely the same amount in cents per 100 lbs. as the standard all-rail rates, and as the rates themselves at present are lower than the standard rates it follows of course that the same increase in cents per 100 lbs. is a larger percentage. The existing differentials are established, as the Commission well understands, in order that stability of rates may be secured, and the existing differentials have been preserved in the proposed adjustment for the same reason. From such specific testimony as was offered concerning the movement via rail-and-lake routes it appears that those routes receive a fair if not an excessive share of the traffic. Mr. Lawrence, speaking for the textile industry in New England, testified that 75% of the west-bound traffic of that industry went west over the differential routes. It is obvious that the same proportion of the total tonnage would continue to be shipped via the differential routes under the proposed adjustment. If the standard all-rail rates proposed by the carriers are found to be reasonable it is submitted that it necessarily follows that differential rates that move a fair share of the traffic must also be reasonable.

III.

OBJECTIONS TO DISTRIBUTION OF PROPOSED INCREASE.

We have considered the principal reasons which led the traffic officials of the carriers to distribute the increase in rates in the manner in which it has been done. There remain to be considered the objections offered by representatives of the shippers to the methods employed by the carriers in making the advances. Only two witnesses were offered on behalf of the shippers whose opinions need here be referred to—Messrs. Ives and Barlow.

It is a fair deduction from the testimony of Mr. Ives that in his opinion no advance in freight rates should be made until the official, western and southern classifications are fused into a uniform classification. He asserted that until this was done no scientific treatment of the subject could be had, and conceded that when it was done there would probably be found to be hundreds of commodities which were not bearing what they should bear, and could and should be advanced regardless of the needs of the railroads for additional revenue. When asked what action he would take if confronted with the need of revenue in advance of the adoption of a uniform classification, he stated that he would pick out commodities and articles of commerce in and out of the classification. Mr. Ives made no enumeration of the commodities which should, under such circumstances, be advanced, and offered no plan which could be considered either by the carriers or the Commission in the present emergency.

Mr. Ives stated that the increase on one or two of the classes on the Delaware, Lackawanna & Western figured

only 10%, while the increase on nearly all of the other roads in the same territory approximated 20%.

It is evident that Mr. Ives had before him the percentages of increase of the total revenue derived from each class, including both affected and unaffected tonnage, appearing on page 983 of the record. The Lackawanna table, which should be compared with the percentage of increase for the other lines, is found on page 988 of the record, where it appears that the percentage of increase of revenue derived from the affected tonnage in each class compares favorably with the percentages on other lines.

Mr. Ives also called attention to the estimate of the Boston & Maine of increased revenue likely to result from the proposed increase on second class traffic, saying that a rough estimate from such figures as he could secure would indicate that the increase in the revenue on the Boston & Maine from the butter and egg traffic alone would exceed the estimate of the Boston & Maine for all second class traffic. (Record, 4479.)

Having in mind this criticism, a further study was made of the Boston & Maine figures, from which it appears that the estimated business per year based upon careful compilation of this traffic for the month of November, 1910, shows the following results:

Shipment of butter and eggs over Boston & Maine Railroad to Boston.....	32,589,360 lbs.
Proportion originating in affected territory.....	15,492,528 lbs.
Percentage of shipments from affected territory.....	47%
Estimated increase which would accrue to B. & M. for the year at say $2\frac{1}{2}$ c. per cwt.....	\$3,873.13

From this statement it appears that the estimate made by Mr. Ives is much too high.

Mr. Ives also questioned the accuracy of the statement of the Lake Shore & Michigan Southern Railway Company showing the effect of the proposed rate increase based on actual results compiled from the records of the tonnage carried during six specific days in the calendar year 1909 as follows:

"I found, for example, in the Lake Shore statement the figure \$277,000 as the increase on all through commodity movement. That aroused my curiosity. In their annual report I looked up the movement of the fresh meat, packing house products and live stock. Those three commodities alone I found amounted practically to 1,000,000 tons moving on the Lake Shore. As I say I have no way of making exact figures, but I assume a very large proportion of this came from Chicago, where their share of the increase would be 40 or 50c. per ton. An increase of 28c. per ton applied to these three commodities alone would produce the 277,000, without taking into account any of the other 40 or 50 commodities in the list which it is proposed to advance."

Mr. Ives' assumption is erroneous for the following reasons:

First, in the compilation of the six-day study of traffic carried by the Lake Shore & Michigan Southern Railway,

all traffic carried under commodity rates was shown in one amount and hence the item of \$277,000 of increased revenue that would be derived from traffic carried under commodity rates embraced only fresh dressed meats and cattle, upon which rates are generally different from class rates, and as packing house products, hogs and sheep are carried under class rates the tonnage of such traffic was included with the tonnage of all fifth class freight.

Second, a large part of the tonnage of live stock carried by the Lake Shore & Michigan Southern Railway originates at points in Ohio, Indiana and Michigan, and is transported to Chicago, Cleveland or Buffalo, and upon such traffic the increased revenue to that company would be less than 40 or 50c. per ton, which would be its approximate proportion of the increased rates if all of the live stock was transported from Chicago to Buffalo destined to eastern points.

Third, a considerable percentage of the fresh dressed meats carried by the Lake Shore & Michigan Southern Railway is not transported by it from Chicago to Buffalo, but it either originates at, or is received from connecting carriers at Cleveland and transported to Buffalo. And with respect to such traffic the increased revenue to the Lake Shore & Michigan Southern Railway would be considerably less than 40c per ton.

Fourth, a large percentage of the packing-house products carried by the Lake Shore & Michigan Southern Railway either originates at or is received from connecting carriers at Cleveland, Ohio, and is transported to Buffalo, and as to such traffic the increased revenue

that would be derived by that company would be materially less than 40c per ton.

Mr. Barlow specified seven objections to the proposed increases in rates. First, the increases are placed upon but 10% of the freight tonnage. Second, substantially 40% of the increases are placed on first class. Third, substantially 75% of the increases are placed on the first three classes. Fourth, financial conditions do not require an advance. Fifth, the class rates have already been burdened, (a) by advances in classification, (b) by advances in lake-and-rail rates. Sixth, the proposed relation between the classes is unjust. Seventh, the present class scale having been in effect so long, it ought to be reduced now if ever.

In connection with these seven objections, it must be noted that Mr. Barlow did not say that the rates as proposed, would, in his opinion, exceed the fair value of the service rendered, and when his attention, on cross-examination, was specifically called to that point, he declined to include it in his list of reasons why the advance should not be made.

Concerning Mr. Barlow's objection that the the entire increase applies on only 10% of the freight tonnage, it is to be noted that the percentage relation between the tonnage affected by the proposed increases in rates, and that unaffected by such increases, varies with the different carriers, partly because of the relatively larger proportion of merchandise tonnage carried by certain carriers, and partly because of the fact that the largest carriers of commodity tonnage are the largest carriers of coal, coke and ore, iron and steel articles and other articles, upon which, as

has been stated, general advances have been made in recent years, and are not proposed to be made now. For illustration, the total tonnage carried by the New York Central during the calendar year 1909, as indicated by the six day study of the tonnage carried by that company, was 43,942,521 tons. Of this tonnage 4,897,836 tons would be affected by the proposed increases in rates,—approximately 15% of the total. If, however, we deduct from the total tonnage the tonnage of commodities which have been advanced in recent years, so far as these figures can be ascertained, a very different result is produced. As shown by its annual report for the calendar year 1909, the New York Central carried 18,137,014 tons of coal, coke and ores. The company makes no separation of the tonnage of manufactured iron and steel articles carried by it, but a low estimate of such tonnage is 2,000,000 tons. If the 20,000,000 tons of this group of commodities be deducted from the total tonnage, 43,942,521, it leaves approximately 24,000,000 tons. This latter figure includes the tonnage of grain and grain products, sugar, coffee, brick and other commodities the rates upon which have been increased in recent years. No statistics are available to show the amount of deduction which should be made from the residue of 24,000,000 tons to cover the total of these commodities, but it is well known to the Commission that the total is very large, and it is obvious that the tonnage affected by the proposed increase in rates, 11,865,172, is considerably more than 50% of the tonnage upon which rates have not heretofore been advanced.

In connection with the testimony of Mr. Barlow, an

exhibit was offered by him showing the relation of the tonnage affected by the proposed increases in rates, to the total tonnage of seven carriers which were grouped together, the totals showing that the combined percentage relation was 10.1% affected of the total tonnage. The companies selected by Mr. Barlow for the purposes of this exhibit were the Pennsylvania R.R., Pennsylvania Company, P. C. C. & St. L. Ry., Vandalia R.R., Grand Rapids & Indiana R.R. and Lake Shore & Michigan Southern Ry. It is well known that some of these carriers are the largest carriers of those commodities, such as coal, coke, iron, ore, manufactured iron and steel articles, upon which increases in rates have been made in recent years, and upon which, for that reason, no further increases are contemplated. If the percentage of the affected tonnage of these carriers to the total tonnage be separately analyzed, they show the following results:

Pennsylvania Railroad.....	5%
Pennsylvania Company.....	8%
P. C. C. & St. L.....	13%
Vandalia	22%
Grand Rapids and Indiana.....	28%
New York Central	27%
Lake Shore.....	17%

It will be noted that the Pennsylvania Railroad's percentage of affected to total tonnage is 5%. If that company's tonnage of coal and coke alone be excluded, the percentage rises from 5% to 21%. The New York Central's percentage is 27%. If that company's tonnage of coal, coke, ore and manufactured iron and steel articles, amounting to approximately 20,000,000 tons as estimated

above, is excluded, the percentage rises from 27% to approximately 50%. The Big Four, a carrier which Mr. Barlow omitted to include in his statement, shows a total tonnage of 20,643,309, of which 11,293,965, or approximately 55%, will be affected by the proposed increases in rates, making no deduction in the case of this company for the tonnage of commodities upon which rates have heretofore been advanced.

Mr. Barlow's second and third objections that substantially 40% of the increase is placed upon the first class, and substantially 75% on the first three classes, are based upon a statistical table prepared by the Trunk Line Association for the carriers embraced therein, showing the total tonnage of westbound freight traffic from New York City destined to and beyond the western termini of the trunk lines, embracing all-rail, rail-and-lake, and so-called California or Pacific Coast traffic for the year 1909.

In using the figures contained in the statement, Mr. Barlow estimates that if all of the traffic embraced therein was transported under class rates, and all of the traffic was transported to Chicago at the rates applicable thereto, the advance in rates would be \$2,663,323 the distribution of which as between the six classes would be 43.8%, 13%, 18.3%, 6.1%, 16.6% and 2% respectively. Mr. Barlow's calculation is inaccurate and misleading, for the reason that the statement includes tonnage destined to the western termini of the trunk lines and to all points beyond. This traffic is carried under widely varying rates, which yield in numerous instances less revenue than that accruing under class rates applicable from New York to Chicago. The statement is further misleading in that it

takes the tonnage from New York City, a point from which, as is well known, the volume of shipments of high-class traffic tremendously exceeds that from any other point in the United States.

A much more accurate approximation to the probable distribution of the increased revenue from the proposed rates among the various classes of traffic is afforded by the statistics of estimated revenue, furnished by the carriers. The six-day studies of the principal New York Central lines indicate the following distribution.

CLASSES.	N. Y. C. PER CENT.	L. S. & M. S. PER CENT.	M. C. PER CENT.	C. C. C. & ST. L. PER CENT.
1st.....	20.49	23.86	20.46	21.00
2nd.....	10.21	12.58	8.39	8.84
3rd.....	10.03	10.99	7.44	8.48
1, 2 and 3 Classes.....	40.73	47.43	36.29	38.32
Rule 25.....	3.16	3.60	2.46	3.82
Rule 26.....	3.09	3.62	2.63	2.75
1, 2 & 3 and Rules 25 & 26.....	46.98	54.65	41.38	44.89
4th.....	6.67	3.62	8.06	7.50
5th.....	15.28	15.53	16.31	12.83
6th.....	4.62	4.10	4.27	3.78
4, 5 and 6 Classes.....	26.57	23.25	28.64	24.11
Rule 28.....	....	.22	.34	.21
4, 5 & 6 and Rule 28.....	26.57	23.47	28.98	24.32
4 times 1st.....	.04	.02	.04	.08
3 " ".....	.13	.26	.19	.10
2½ " ".....	.02	.07	.04	....
2 " ".....	.69	1.27	.68	.78
1½ " ".....	1.56	1.76	1.45	1.94
1¼ " ".....	.12	.12	.14	.56
In Excess of 1st Class.....	2.56	3.50	2.54	3.46
Minimum.....	2.71	4.00	3.30	3.14
Total all Classes.....	78.82	85.62	76.20	75.81
Commodities.....	21.18	14.38	23.80	24.19
Total.....	100.00	100.00	100.00	100.00

The percentages above given should also be noted in connection with Mr. Barlow's Exhibit B, which takes the Pennsylvania Railroad, Pennsylvania Company, P. C. C. & St. L. Ry. Co., Vandalia, Grand Rapids & Indiana, Lake Shore and New York Central, for the purpose of showing that averaging the percentages of these companies 84.7% of the estimated increase in revenue will be derived from class traffic, leaving 15.3% to be derived from commodity traffic. The carriers named, as has been pointed out, include some of the largest carriers of coal, coke and iron ore, and manufactured iron and steel articles. The percentages of these companies, taken separately, and including other companies not included in Mr. Barlow's exhibit, are as follows:

	ESTIMATED IN- CREASE FROM CLASS TRAFFIC. PER CENT.	ESTIMATED IN- CREASE FROM COMMODITY TRAFFIC. PER CENT.
P. R.R.....	86.3	13.7
Pennsylvania Co.....	89.1	10.9
P. C. C. & St. L. Ry.....	92	8
Vandalia.....	79.1	20.9
G. R. & I. Ry.....	72.2	23.8
N. Y. C. & H. R.....	78.8	21.2
L. S. & M. S.....	85.6	14.4
M. C.....	76.2	23.8
C. C. C. & St. L.....	75.8	24.2
Erie.....	88.3	11.7

Mr. Barlow's objection respecting the financial condition of the carriers is separately dealt with.

The fifth objection has already been dealt with in this brief.

The sixth objection, that the proposed percentage relation between the classes is unjust, needs only the obser-

vation that a horizontal percentage increase between all points in the territory is simply impossible without a complete reconstruction of the existing fabric.

The seventh objection, that the present class scale has been in effect for so long a time, so far from the suggestion that it should be maintained or reduced, furnishes one of the principal reasons why it should be increased.

Mr. Barlow's general position, like that of Mr. Ives, was purely negative. When pressed to suggest a workable plan by which an increase in revenue could be made, assuming that to be needed, he utterly failed to make any practical suggestion.

IV.

CARRIERS HAVE SUSTAINED THE BURDEN OF PROOF.

Assuming the existence of a power in Congress to require railroad companies to establish to the satisfaction of this Commission that an advance in their rates is reasonable, preliminarily to the advance becoming effective, and that Congress has imposed this obligation upon railroad companies by the provisions of the Act of June 18, 1910, it is submitted that the companies concerned in the present proceeding have by the evidence which they have presented discharged this burden.

The Act of June 18, 1910, by its terms, provides that "At any hearing involving a rate * * * sought to be increased after the passage of this Act, the burden of proof to show that the * * * *proposed increased* rate is just and reasonable shall be upon the common carrier."

If we have regard merely to the language used, there is some basis for the contention that it is incumbent upon the carrier to prove that the proposed rate is reasonable. But if this had been the intention of Congress, it would have been more clearly and more naturally expressed by a requirement that the carriers must establish the reasonableness of the *proposed rate* and not of the "*proposed increased rate*." The use of the word "increased" strongly indicates that the purpose of the framers of the Act was to require the carriers to establish the reasonableness of the rate in so far as it was an increased rate over that theretofore existing.

But when the question is considered apart from the language, merely, and in connection with the general scope and effect of the Act, it seems to be reasonably clear that Congress by the provision in question did not intend to require that carriers, in the event of an advance in their rate being challenged, would have to go further than to show a good reason for the advance. It is clear that in respect to the rate in existence prior to January 1st, 1910, Congress has not imposed upon the carrier the duty of establishing primarily its justice and reasonableness in the event of a proceeding being initiated questioning or attacking its reasonableness, whether the proceeding be initiated by a complaining shipper or by the Commission itself under authority conferred by Section 13 of the Act, and it would be wholly unreasonable, and consequently indefensible, construction to hold that Congress intended that an existing rate should be presumed reasonable until the contrary were established in a case where the inquiry arose in

respect to a rate not advanced, but that no such presumption should be indulged as to the existing rate when the carrier was seeking or proposing to advance it. Clearly, the power to suspend a proposed advanced rate pending the final determination as to its reasonableness which has been conferred upon this Commission, extends no further than to so much of the rate as represents the advance over the old rate, for as the result of the suspension of the new rate the old one necessarily remains in force. And it necessarily follows from this consideration that the Commission's power of suspension cannot be exercised when the evidence warrants the proposed advance, and it would be a wholly inadmissible construction of the Act that would lead to the anomalous result that upon the same and identical state of facts this Commission could not suspend an advance because the carrier had justified it, but would have to hold the advanced rate as a whole unlawful.

The Act makes no distinction as to the extent of the burden of proof which the carrier must assume when a proposed advanced rate is subjected to the scrutiny of this Commission: "At any hearing involving a rate, etc., the burden of proof shall be upon the carrier," is the language used, and it necessarily follows, therefore, that proof which will discharge the burden when suspension is under consideration must equally do so when the inquiry has to do with the final determination of the reasonableness of the advanced rate.

This view of the obligation imposed by the Act of 1910, is in accord with the obligation imposed upon railroad companies by the English Acts which have dealt with the

same subject. By these Acts the burden of proof which is put upon the companies is specifically confined to proof "That the increase of the rate or charge is reasonable." Such difference as exists in the phraseology is immaterial when the object of the legislation of both countries is considered. This object was the prevention of the collection of increased transportation charges until satisfactory reasons for the advance had been submitted by the carriers. Considering the extent of the obligation which Congress has undertaken to impose upon carriers when advances in their rates are under consideration, it is submitted that Congress intended nothing more than by legislative enactment to impose upon carriers an obligation which had already measurably been imposed upon them by the decisions of this Commission.

In several cases it has been held by this Commission that where carriers undertake to advance rates which have been in force for a considerable period of time, the burden is upon them to establish some justification for the advance made. It would not be profitable to take up the time necessary to refer to all of these decisions. It will suffice to refer to one of the latest, that of Pacific Coast Lumber Manufacturers' Association *vs.* Northern Pacific Railway Company, 14 I. C. C. Rep., 23, where Commissioner Clements, after considering the effect of the previous decisions of the Commission and of the decision of the Supreme Court of the United States in Interstate Commerce Commission *vs.* Chicago Great Western Railway Company, 209 U. S. 108, said, after quoting from the decision just mentioned:

"This is a mere affirmance of what the Act to

Regulate Commerce itself recognizes as a right of the carriers, viz., the right to initiate rates. And it must be apparent that were a presumption of wrong to attach to any change in rates which the carriers are authorized to establish, this must result in a denial of the free exercise of the right guaranteed by the Act. But it would be going far to say that the language above quoted is authority for the inference that the Supreme Court does not still recognize the principle that a rate which has been in force for a long period of years, and with respect to which commercial conditions have been adjusted, which rate has presumably afforded a reasonable return to the carrier, may not be materially advanced without imposing upon the carriers the burden of justifying the increase."

In the case alluded to, the Supreme Court of the United States, in considering the propriety of an advance in rates made by a carrier, had made use of this expression:

"It must also be remembered that there is no presumption of wrong arising from a change of rate by a carrier. * * * Undoubtedly when rates are changed the carrier making the change must, *when properly called upon*, be able to give a good reason therefor, but the mere fact that a rate has been raised carries with it no presumption that it was not rightfully done."

The words italicized in the above extract from the Court's opinion clearly indicate that in the view of the Supreme Court of the United States the carrier was not required to justify an advance in its rates unless properly called upon to do so. What would constitute a sufficient challenge or call for such justification was not defined by the Court.

The decision of the Supreme Court settled the law to

the effect that the carriers by advancing rates imposed no burden upon themselves to justify the advances until they were properly called upon to do so, and the question was left open, as we have said, as to what facts or conditions would create a situation which required or called upon the carrier to justify what it had done.

In this state of the law, Congress intervenes and itself declares under what circumstances carriers shall be required to affirmatively establish the reasonableness of advance in rates. But when they speak, as they do in the clause which we are considering, of the "burden of proof," are we not fully warranted in claiming that what they had in mind was the burden of proof which this Commission had held must be assumed by carriers when advances in long established rates were made, and that it was not intended by the language used to impose upon carriers any greater or more burdensome obligation? Clearly, we think that such a construction is not only warranted, but required, when all the circumstances connected with or surrounding the question with which Congress was dealing are taken into consideration.

In the present case it is immaterial whether the burden of proof is limited to the increase merely, or extends to the increased rate, for the burden, whichever it be, has, we submit, been met and discharged. As we have shown, the facts not merely warrant, but require that the present rate should, for the purposes of this inquiry, be regarded and treated as, at least, not excessive. As has been shown, class rates as they now exist have been in force for many years, and while commodity rates as now estab-

lished have not been in force so long a time, the evidence has shown, and it is within the knowledge of this Commission, that these rates have been adjusted from time to time to commercial conditions. The extent to which the present rates, and those heretofore existing, have made possible the growth and development of the country's resources is of course known to this Commission. The statistics compiled and published by this Commission sufficiently indicate the extent of the increase and the volume of traffic transported by the carriers whose lines are embraced in the territory in which it is proposed to advance the rates which are now under consideration by this Commission. It appears from these statistics that in the year ending June 30th, 1903, the number of tons of freight carried one mile by the companies embraced in what are designated in these statistics as groups 2 and 3, in which groups are included the lines of most of the companies whose rates are now under consideration, aggregated 82,000,000,000 tons; while in the year ending June 30th, 1908, the statistics for this year being the latest available, this figure had grown to 102,000,000,000 tons, an increase of almost 25%. Such evidence as was adduced in the present proceeding furnished some noteworthy illustrations of the free movement of traffic under the present rates. Manufacturers of shoes in New England have been able to sell their product in Chicago or St. Louis in competition with manufacturers in St. Louis. The St. Louis manufacturer has in turn competed with the New England manufacturer in New England markets. Manufacturers of furniture located at Grand Rapids, Mich., sell their product in territory

reached through the cities of Chicago and Cincinnati, where other manufacturers making the same grade of goods are located. New England manufacturers of candy ship their product all over the country.

Upon well-known facts of this character, and upon the knowledge possessed by the Commission of the rate structure throughout official classification territory, as evidenced in the report of the Commission, we confidently assume that the burden of proof to be sustained by the carriers in this proceeding is that relating to the reasonableness of the proposed increases.

It was suggested in the course of the hearings, and in a brief filed with the Commission by Mr. William A. Glasgow, Jr., that the carriers have not discharged the burden of proof because they have failed to establish by affirmative proof the reasonableness of the increase on each specific article of the many thousand articles embraced in the official classification, the rate on which will be advanced if the advance in class rates becomes effective.

This, we submit, is a totally erroneous view of the matter.

The Interstate Commerce Act permits and indeed requires classification for the purposes of rate-making, and a classification has accordingly been made and is on file with the Commission.

If the companies have demonstrated, as we believe they have, that an advance in the class rates is warranted, and that the advances proposed to be made therein are reasonable, then it necessarily results, we submit, that the reasonableness of the advance, as applicable to all articles

embraced in the classes, has been thereby established, and, if the circumstances surrounding or connected with the transportation of any particular article are such that, for some reason, it ought to be relieved from the advance to which it will be subjected, this fact would not tend to establish that the advance made in the rate on the particular class which embraced this article was not warranted, but it would only tend to establish that the classification of that article should be changed.

It is no answer to this view to call attention to the fact that, if an advance has been made in the rate on this article alone, the burden then would have been upon the carrier to justify that particular advance, for that result would follow in the case instanced because that particular rate had been advanced and, as a consequence, the article had been treated as standing alone and not as one of a class. But given the case in which articles are properly embraced in one class—and, so far as the present classification is concerned, it is to be presumed that the enumeration made therein of various articles under the respective classes is fair and reasonable—and the carrier shows that conditions have arisen which justify an advance in the rate, not on any one article of the class as distinguished from another, but on the class as a whole, it would be extending the doctrine of burden of proof beyond all reasonable bounds to hold that the carrier must go further and must prove that no conditions exist in respect to any one of the articles enumerated in the class which should operate to relieve it from the payment of the advanced

rate. An inquiry of this character, involving the many thousand articles in the six classes of the official classification, would require years for its completion.

Respectfully submitted,

FRANCIS I. GOWEN,
CLYDE BROWN,
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"Without regard to the personnel of railroad officials, without regard primarily to the interest of the stockholders, but in the interest of public welfare and national prosperity, we must permit railway earnings to be adequate for railway improvement at advantage and profit."—Hon. MARTIN A. KNAPP, President Judge of the United States Court of Commerce.

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BEFORE THE
INTERSTATE COMMERCE COMMISSION.

DOCKET No. 3400.

IN RE INVESTIGATION OF PROPOSED ADVANCES IN RATES BY CARRIERS IN OFFICIAL CLASSIFICATION TERRITORY.

BRIEF OF ARGUMENT

FOR

THE TOLEDO, ST. LOUIS AND WESTERN RAILROAD COMPANY.

[INDEX ON INSIDE OF COVER.]

CLARENCE BROWN,
LUCIEN HUGH ALEXANDER,
Counsel.

Business

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"Today a new condition of affairs has come about. The credit of the American railroads has been placed in the hands of this Commission."
—PRESIDENT WILLARD OF L. & O. RAILROAD, RECORDED EASTERN CASE, DOCKET No. 3400, p. 2185.

"Our new railway act goes much further and greatly increases the powers and duties of the Interstate Commerce Commission. The discretion of the Commissioners, not within judicial control by appeal, is now very wide, and they have in their hand for the weal or woe of general business a power that sometimes makes one tremble."—PRESIDENT TAFT, in New York, October 1, 1900.

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CARRIERS.

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It would be idle for the American people to ignore the fact that a revolution was brought about in the railway world in June, 1910, when the Congress placed in the hands of this Commission "control of the purse" of all interstate railways, thereby delegating the power over them of virtual life and death, for while the Commission's power must be exercised within the limits of constitutional prerogative, a serious error by this Commission would not only paralyze railway development thruout the country, but

Business

EV-20

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would force many carriers into insolvency before constitutional restraints could be effectively invoked. It is well to recall that one of the master minds of the last century, Herbert Spencer, declared in his *Synthetic Philosophy*:

"Beyond the primary truth that no idea of a part can be formed without a nascent idea of some whole to which it belongs, there is a secondary truth that there can be no correct idea of a part without a correct idea of the correlative whole."

We in our American way express it more tersely when we say we must get things into true perspective. In the effort, in dealing with the railroad problem, to get the desired perspective, it is necessary to consider the relationship of the present situation, not only to the past, but particularly to the future, for in the proceedings pending, principles will be enunciated and a policy declared, born of the experiences of the past and of a prognosis of the future, which will have an all-potent influence, thru the next few years at least, upon the welfare, not only of the railroads of the country, but upon the commercial and industrial life of the entire body of the American people, and perhaps upon the destiny of the government itself,—for who shall say to what dire consequences enforced government ownership might not lead on the American continent?

Within the present decade the railroad situation was such as to call forth, less than three years ago, the following public expression of view from the long-time chairman of this Commission, Hon. Martin A.

Knapp, the President Judge of the newly-created United States Court of Commerce:

"We are nearing the end, let us hope, of a period of violent and sometimes misdirected agitation, an agitation provoked by methods and practices long in vogue, but now happily nowhere defended, when we may confidently expect an early and healthy reaction in public sentiment." *

This was in May, 1908. Two years pass, and in an effort to solve the American railroad problem, Congress gives to the Interstate Commerce Commission the increased power embodied in the legislation of 18 June, 1910, thereby bringing about a complete revolution in the rate-making power, one which caused President Taft, within four months of the enactment, to declare in a public address in New York City that "*they [the Commission] have in their hands, for the weal or woe of general business, a power that sometimes makes one tremble.*" That the Commission understands the seriousness of the situation is evidenced by the fact that in the Eastern and Western proceedings they have taken approximately 10,000 pages of testimony.

We should remember that revolutions are the milestones of civilization, and that they more frequently mark advances than retrogression, and it is not always the power itself, but the erroneous exercise of the power, that is fraught with danger; but if such vast power as is to be exercised by this Commission, or by any commission, is not reviewable, because clothed in

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the garb of an administrative or legislative function, well may the President and people of this nation tremble.

A Grave Constitutional Problem.

The work of the Interstate Commission Commission in the past has been productive of so much good and has prevented so much in the way of evil results, that it would seem almost ungracious to call attention, in the opening portions of this brief, to a grave constitutional question which presents itself,—one which, however, should not be passed without comment, altho of course this is not the *forum* for the argument or settlement of such an issue.

The point is this: If it be true, and it is certainly beyond dispute, that the Congress in the exercise of its legislative functions has established a standard for railway rates by declaring that they must be just and reasonable, it is equally true that the Congress has endeavored to confer upon the Commission the power to determine the issue as to whether a given rate or fabric of rates is within the standard so established and to issue a restraining order, *in fact an injunction*, prohibiting the collection of such rate or rates, if convinced that they are unlawful.

If this power sought to be conferred is merely the exercise of an administrative function, analagous to the determination of the height of a bridge over a navigable stream, then there can be no doubt but that the exercise of the power by the Commission is constitutional; but, on the other hand, if the determination of

the issue as to whether the given rate or fabric of rates is or is not within the standard established by the Congress, and the issuance *by the Commission* of an injunction constitute in fact the exercise of judicial powers, then the broad constitutional question presents itself, tho to state it is to answer it, whether Congress has the authority, under the Constitution, to vest such judicial power in any group of persons, the members of which hold their offices only for a term of seven years instead of during good behavior, as required under Article III, Section 1, of the Constitution of the United States in the cases of all those authorized to exercise the judicial power of the United States, and *the sole object* of which provision was to secure for the exercise of the judicial power, vested by the people of the nation, thru the Constitution, in the government of the United States, a body of men more independent if appointed during good behavior, that is, for life, than it was believed they could be if they served only during a term of years with the mere possibility of reappointment before them. A study of the debates in the United States Constitutional Convention will establish beyond dispute that this was the reason which brought about this constitutional requirement.

While this question as to the nature of the powers conferred upon the Commission has been considered by some of our courts *prior to the legislation of 1910*, it may well be doubted if it has been passed upon finally, especially in view of the fact that the power now conferred by the Act of 18 June, 1910, is vastly

greater both in its operation and effects than any heretofore exercised by the Commission.

The following words of Chief Justice White, of the Supreme Court of the United States, in a recent decision by that tribunal, declaring the points to be considered by the court in passing upon an order of the Commission, are pertinent and suggestive, particularly the portions under "*c*," which we place in italics:

"Beyond controversy, in determining whether an order of the commission shall be suspended or set aside, we must consider,

a, all relevant questions of constitutional power or right;

b, all pertinent questions as to whether the administrative order is within the scope of the delegated authority under which it purports to have been made; and,

c, a proposition *which we state independently*, although in its essence it *may* be contained in the previous one, viz., *whether, even although the order be in form within the delegated power, nevertheless it must be treated as not embraced therein, because the exertion of authority which is questioned has been manifested in such an unreasonable manner as to cause it, in truth, to be within the elementary rule that the substance, and not the shadow, determines the validity of the exercise of the power.*"

Interstate Commerce Commission *v.* Illinois Central R. R. Co., 215 U. S., 452, 470.

It cannot be doubted but that the Commission, *qua* Commission, have in the past regarded many of their functions to be essentially judicial in character, for their hearings are conducted in a room, presumably designed with the approval of its members, the ap-

pointments of which are similar to those of a Court of Justice with its elevated bench, its bar, and its witness box; the substance as well as the form of the proceedings conform in essential particulars to those of a court, the members of the bar and persons present rise as a mark of respect when the Commission enter to hear the causes pending, and the members of the Commission when trying cases are frequently addressed, and very properly so if their functions are judicial, by the titles "Judge" and "Your Honor."

Whether or not the Commission is in fact and in substance, irrespective of the shadow, a body exercising a part of the judicial power of the United States, it is to be hoped that some method for the solution of the constitutional problem may be found to avoid the chaos which would result from any sudden or material change in the plan, under which the Commission is now so effectively working.

The Needs of the Toledo, St. Louis and Western Railroad Company.

This carrier and the Chicago and Alton Railroad, which it controls, constitute a system directly serving populous sections of Ohio, Indiana, Illinois, and Missouri. They together operate an all-track mileage of 1,824 miles and a single-track mileage of 1,370 miles. Their pressing needs are succinctly shown by the Commission's ten-year exhibits of cumulative statistics, which establish that the ten-year average per cent of annual corporate income upon the capital stock outstanding of the Toledo, St. Louis and Western Rail-

road is only 2.02 per cent, and that on the Chicago and Alton it is but 3.32 per cent. For the latter, the annual operating income percentage on cost of road and equipment has averaged, during the last ten years, but 3.69 per cent per annum, and for the former only 2.82 per cent.

On these roads, for the fiscal year 1910, compared with that of 1909, the Commission's ten-year statements show that there has been in both of these items (per cent of corporate income on capital stock outstanding and per cent of operating income on cost of road and equipment) a marked decrease.

Vitally important as is the need of increased revenue to the Toledo, St. Louis and Western Railroad Company, we will not here further elaborate the situation, as it is clearly shown on the Commission's ten-year sheets, and for the additional reason that this system constitutes but a small percentage of the total mileage of the carriers pleading before the Commission in the present proceedings, and we recognize that the forthcoming decision as to rates will be controlled, to a large extent, by a general view of the condition of all the carriers operating in substantially the same territory.

The Vital Issue in the Case.

We will accordingly concentrate this brief upon the point which we regard as the dominant one from the standpoint of all the carriers involved, and from that of the public as well, to wit, the question as to whether or not American railways are to be permitted to accu-

mulate a surplus sufficient to take care of obsolescence, to maintain credit, and to keep their properties abreast of the needs of the time. In doing so, we will draw *ad libitum* from the luminous testimony of the four executive heads of great systems, who appeared before the Commission to justify the proposed increases in rates, President McCrea of the Pennsylvania system, President Brown of the New York Central Lines, President Ripley of the Santa Fe system, and President Willard of the Baltimore and Ohio.

The argument will be presented under two heads:

I. *The interests of the public welfare demand that the common carriers of the nation shall be permitted to earn sufficient surplus to enable their development to keep pace with the demands of the times.*

II. *Under the law as enacted by the Congress the responsibility for the future credit of American railways rests upon the Interstate Commerce Commission, and this credit cannot be maintained unless the Commission authorize a substantial increase in revenue.*

I.

The interest of the public welfare demands that the common carriers of the nation shall be permitted to earn sufficient surplus to enable their development to keep pace with the demands of the times.

The vast influence of the railways upon the life of the American people cannot be better indicated than by calling attention to the fact that in the fiscal year end-

ing June 30, 1910, the total operating revenues of all our railways amounted to \$2,787,266,136.64, and the operating expenses to \$1,847,189,773.03, and that the total mileage operated was a trifle over 239,052 miles.

The marvelous growth and development of American transportation facilities caused Judge Knapp in 1908, when chairman of the Interstate Commerce Commission, to exclaim:

"To my mind it is a most impressive fact, so great as to elude the grasp of imagination, that the railway traffic of the country fully doubled in the first seven years of this twentieth century."

And at the same time he asserted, in his carefully prepared paper before the American Academy of Political and Social Science:*

* *The Annals* of same for 1908.

"Without regard to the personnel of railroad officials, without regard primarily to the interest of the stockholders, but in the interest of public welfare and national property we must permit railway earnings to be adequate for railway improvement at advantage and profit."

He also declared:

"I not only want railway earnings to permit of rapid and sufficient railway extension, with increased facilities for comfort and convenience, for speed and safety, but I want all that to be accomplished by and connected with the most liberal compensation to an adequate force of competent employes."

The present proceedings, with the element of enormous wage advances, puts this closing declaration of

the then chairman of the Commission for the first time to practical test. President McCrea testified (docket 3400, p. 1981):

"The things that are clear to us are that there have been three increases of wages, together with adjustments, and other things of that kind, which simply show that [in the last ten years] the employes have had their wages increased 33 per cent. Those have been founded on the claim that it was necessary they should have them to meet the increased cost of living.

"Our stockholders, of which there are some 60,000 to 70,000, half of whom are women, have not received practically any increase in that period. They are receiving today the same amount that they received ten years back, and yet the expenses of their living have gone up just as much as those of the other people."

No one can doubt but that President Taft clearly understood the damage which would result to the country, from a failure on the part of the Commission to take a broad and statesmanlike view of the situation, when he so recently declared that "*they have in their hands* for the weal or woe of general business a power that sometimes makes one tremble."

And within a few short weeks after making the statement he appointed the chairman of the Commission a United States Circuit Judge, to head the new Court of Commerce, the court which will in the first instance hear such appeals as may be taken from the decisions of the Commission.

The following principle, as declared by Judge Knapp in May, 1908, is therefore particularly relevant now and should, and we believe necessarily will, have

great weight with his former colleagues upon the Commission. He said:

"Whatever may be our national or State policy in other respects, whatever regulations may be prescribed or obligations imposed, *there must be the opportunity* to charge rates which will give sufficient earnings to make the [railway] business fairly profitable *and to attract the needful capital for its ample extension.*

"* * * *in the interest of public welfare and national prosperity we must permit railway earnings to be adequate for railway improvement at advantage and profit.*"

With all deference to the Commission, it is suggested that if they are not possessed of judicial power, which it is very briefly outlined at p. 4, *supra*, the Congress has in effect attempted to give them, and the use of which power under our system of government is always subject to review by an appellate court, but are exercising vast and far-reaching delegated legislative powers in determining the reasonableness of rates, then the weighty responsibility can only be discharged by the most far-seeing statesmanship, which will take into view in the broadest possible manner the future needs of the country and the possible effects thereon of the pending decision in so far as it may accelerate or interfere with the flow of capital into railway development within the next decade or score of years, thereby either enhancing our growth as a nation or breeding a train of far-reaching disasters. In this view of the subject, the mere thirty or forty millions of dollars of revenue per annum involved to the carriers in the present proceedings, vastly important as that sum is to their present needs,

sinks to insignificance, and the great principle at stake looms across the horizon as dominating the situation.

This vast *legislative* power, if such it really is that the Commission is exercising, is not subject to review except on constitutional grounds, but in the hands of a Commission composed of seven men is open to all the objections so successfully urged at the founding of our present government in 1787 against any legislative body not bicameral in character, for it was then determined that two independent legislative groups were essential to good legislation, each acting as a check upon the other.

In the light of all this, and a full realization of the difficulties besetting the exercise of the powers of the Commission in the future, of whatever character they may be, it is not improbable that President Taft in selecting the titular head of the Commission to pre-

side over the new Court of Commerce, not only desired to pay this compliment to the Commission for its arduous work in the past, but believed one so long familiar with the Commission's routine duties could better lead the new court in the exercise of such appellate jurisdiction as has thus far been conferred upon it by the Congress—in fact, would be more free from restraint in encouraging it to extend the full measure of its powers of review, whatever they may now be or hereafter may become as the result of further legislation. However this may be, it is against the genesis of our Anglo-Saxon institutions that vast uncontrollable power should be lodged anywhere, and certainly in a republic it is contrary to the canons of political science.

If a deduction from these arguments may be ventured it is that the present situation demands a high order not only of administrative ability, but of statesmanship on the part of the Commission.

The Call of the Future.

But great as has been railroad expansion in the past to meet our marvelous cumulative growth as a nation, the pressing question is, what does the future hold in store? President Willard testified (docket 3400, p. 2179):

"One of the ablest railroad men we have in this country, Mr. James J. Hill, has said that the railroads should spend *a billion dollars a year for five years to provide the additional facilities required*. I am sure that the only way in which that money can be obtained is because of the voluntary giving up of those who now have it, and they will not give it up unless they get something instead of it that is sufficiently attractive so that they want it as against any other thing."

President Ripley, basing his judgment upon his great experience in the development of the West, asserted (docket 3500, p. 62):

"Last year, the year just closed, it [the Santa Fe system] earned 8.8 per cent. Now, you ask if that is not money enough, and I say most emphatically that it is not money enough. *It is not money enough to do the things that the public expect of us, the things that we must do if we are to keep abreast of the times*. When an institution as large as ours is standing still, it begins to go backwards, and if we are to meet or approximately meet, the demands of the public we have got to earn a very much larger margin than we

have earned yet, in order to maintain our credit and obtain the money to do what is necessary to be done."

And he further said (p. 65):

"As to our having had money enough, I suppose our experience is the same as that of most other railroads, and that is that *there has never been a time when we did not have before us pressing demands for two or three or four times as much money as was available.*"

President McCrea declared (docket 3400, p. 1951):

"The Pennsylvania Railroad and many of the roads embraced in its system were built at a time when it was difficult to secure capital for such enterprises. The country through which the roads were built was at that time comparatively thinly settled and the business light. The character of the construction which was suitable for the time and the existing conditions was, to a large extent, unsuited to later conditions.

"The safety of the public and of employes required elimination of grade crossings of highways, the use of safety appliances, and the use of improved materials and equipment, all of which in themselves do not yield much, if any, net, return, and it was to meet these conditions and to adapt its road and equipment to modern requirements that the uncapitalized earnings in the form of surplus have been so freely spent."

And President McCrea also testified (docket 3400, p. 1961):

"In closing, I want to say that, based on my railroad knowledge and experience, I believe that, generally speaking, that which I have said in regard to the Pennsylvania Railroad *as to the necessity for the rate advance is equally true of almost all railroads in the United States*, certainly

those which are conservatively managed and which are endeavoring to give the public such a service as they have a right to expect."

So also these weighty words, born of President McCrea's great experience, should carry conviction (docket 3400, pp. 954-55):

"What would have been the condition if the company's earnings had been so restricted in the past as to prevent it from accumulating surplus earnings available for the improvement of its property? If the \$262,000,000 which have been thus expended on the lines east of Pittsburgh had been realized through a sale of securities, these securities would have had to have been sold at a price which could have been realized for them, and *if the earnings of the company had been such as to barely cover the amounts required to meet its interest and dividends on its then outstanding securities*, the prices realized for any additional issues of securities would have been such that the additional charges to which the company would have been subjected would have today necessitated rates higher than those which have been prevailing in order to enable the company *merely to meet its interest and dividend charges.*"

And furthermore he asserted this vital need of the situation (docket 3400, pp. 1952-53):

"It is vitally important that in the future the company should be enabled to continue to pursue the policy which has guided it in the past, and *to provide in part at least for future additions and improvements out of surplus earnings.*

"It is fairly to be expected that the company will be required to make *as great expenditures in the future as it has made in the past. An enormous amount of work remains to be done, for which additional funds will have to be secured.*"

How can they be secured at a fair rate? How can the railways of the country keep pace with this nation's marvelous strides, and how rapid is its growth and development to be? The men who are real statesmen look ahead thru the years and decades and centuries, gauging the future by the experiences of the past.

Growth of Population.

Our probable future increase of population necessarily has an all-important bearing upon the present situation.

Lincoln, when President, and who in so many ways seemed to have the vision of a seer, as the nation drifted into civil war, deemed this growth of population of such transcendent importance that he discussed it *in extenso* in his second annual message to the Congress. See *Messages and Papers of the Presidents*, Vol. VI, p. 136, *et seq.*

Lincoln there exhibited as follows the known increase by decades in our population since the first census in 1790:

"Year.	Population.	Ratio of Increase (per cent).
"1790	3,929,827	.....
"1800	5,305,937	35.02
"1810	7,239,814	36.45
"1820	9,628,131	33.13
"1830	12,866,020	33.49
"1840	17,069,453	32.67
"1850	23,191,876	35.87
"1860	31,443,790	35.58"

Then, among a number of other deductions, he made these:

"This shows an average decennial increase of 34.6 per cent in population through the seventy years from our first to our last census yet taken.

"It is seen that the ratio of increase at no one of these seven periods is either 2 per cent below or 2 per cent above the average, thus showing how inflexible and consequently how reliable the law of increase in our case is. Assuming that it will continue, it gives the following results:"

Lincoln then inserted a table of estimated decennial increases for a period of seventy future years, from the year 1860 to 1930, by decades, and said:

"These figures show that our country may be as populous as Europe is at some point between 1920 and 1930."

He had previously in the message massed much in the way of statistics concerning density of population in our various States and in Europe. He then made an extraordinary prediction as follows:

"And we will reach this, too, if we do not ourselves relinquish the chance by the folly and evils of disunion or by long and exhausting war springing from the only great element of national discord among us."

This message was sent to the Congress December 1, 1862. We did (as Lincoln foreshadowed would be the case if we continued the war) decrease for the time being our ratio of increase, and so it came about that Lincoln's estimate that in 1900 we would have, if the war were not continued, a population of one hundred

and three millions, was somewhat higher than the fact, as the war went on.

Now, applying the Lincoln method and assuming that we had a population in 1910 of approximately one hundred millions, a mere twenty per cent decennial increase (as against the more than 34 per cent used by Lincoln in his calculation) will have the following startling results (we do not state the detail figures lower than tens of thousands and for sake of brevity only at twenty-year intervals):

Estimated Increase of Population in the United States

Year.	Population.
1910	100,000,000
1930	156,250,000
1950	244,140,000
1970	381,470,000
1990	596,000,000

This represents the increase during only eighty years, less than three generations. Such figures are enough to startle and stagger every thinking man in America, even though we make reasonable deductions from the calculation by reason of the possible operation of the Malthusian doctrine. Yet there can be no adequate perspective of the present railroad problem without taking them into view, for the transportation facilities should keep pace with this growth of population, and must, if we are to progress as a nation as rapidly as we should.

President McCrea testified (docket 3400, pp. 2073-74):

"What this country needs, and what has done so much to develop the country has been the transportation that has been given it. At this present time, I feel that that improvement—additional facilities, if you may choose to so put it—in all branches of the service and all kinds of expenditure, is very badly needed.

"When the Commission, as you put it to me, ask what ought to govern them in deciding as to the general scheme of rates, I think that they must be governed by the knowledge of the needs of the country as a whole and by the conditions under which those needs can be supplied; and that which governs the supply of those things is the return that comes to the investor who is supplying the money to do it.

"Any broad scheme of rates that does not do that, treating the country as a broad proposition, treating the railroads as a broad proposition, will of course fall short of what the country absolutely requires."

President Ripley, in the Western hearing, asserted in his evidence (docket 3500, p. 84):

"There is no railroad in this Western country—I will not say that—there is hardly any railroad in this country today that is built as it ought to be built, that has the safety appliances that it ought to have, or that is in the condition that the public interests require. I think all my railroad friends will bear me out in making that statement. Of course we do not like to depreciate our own property, but the best railroads in this country West of the Alleghany Mountains are very, very far short of what they ought to be to give the service that the public requires and has the right to demand—or would have the right to demand if they paid for it."

He also declared (docket 3500, p. 90):

"There is danger of obsolescence in everything we own. We do not know when we will have to throw away our loco-

*motives; something may be discovered, electrical or otherwise, which will make them obsolete. * * * The railroad of fifty years ago would not carry anything now, and the railroad of fifty years ago would not be considered even equal to a contractor's plan for building a railroad. They have been in constant course of rebuilding ever since, and that has been going on indefinitely."*

And again (p. 72):

"There is no railroad in this western territory which has not substantially arrived now at the point where all its original facilities which have not already been replaced must be replaced. Practically all the railroads in this western country have been partially rebuilt, or will have to be almost immediately partially rebuilt. Many of them have been almost wholly rebuilt, and yet there are a thousand and one things that are almost obsolete which have got to be renewed. We have very large matters of that kind staring us in the face now."

Speaking further of obsolescence, President Ripley testified (docket 3500, p. 71):

"A railroad company certainly should be sufficiently strong financially to take care of it, either by improvement, either by a stated charge to depreciation, or by improvements made out of earnings which would offset any depreciation that there may be. For instance, a station which is entirely adequate for today, or was entirely adequate when it was built fifteen years ago, becomes inadequate, and it has to be torn down and cast away and replaced with another building. I have already said that I think these things should be largely, if not entirely, made out of earnings, and that provides in a way for obsolescence or depreciation."

Of another phase of additions and betterments, President Willard declared (docket 3400, p. 2173):

"I think it is only fair that any addition to the property that adds to its earning capacity, adds to its net income, should stand on its own bottom and should not be charged on the business or the capital already invested. I think it is entirely proper, too, and right, that additional securities should be issued to pay for that. But there is a large class of work to be done on the railroad, such as the elimination of grade crossings, railroad crossings, and innumerable matters of that kind that we all know of and that I could not enumerate, that are constantly going on and cannot now be included in operating expenses, and properly so, no doubt. They must be paid for, they may be paid for out of the income, and they have to be capitalized—at least, they have to be shown as money expended, and that money so expended is shown in the capital cost of the road."

The Surplus Problem.

The proper distribution of such expenses brings us squarely face to face with the question of surplus. On this point President Ripley testified (docket 3500, p. 69):

"The question of the proper distribution between capital and earnings is one that can be argued on both sides, and argued almost indefinitely, but it is my belief that the present generation should join in the expense of those matters—that the railroads should be allowed to pay for them out of earnings in order that the entire burden may not be settled on posterity."

And he gave this forceful illustration:

"When a municipality builds a water works, or issued bonds for the improvement of its streets, it begins at once

to apply a certain amount of the taxes to the extinction of those bonds. The railroad companies should be permitted to do the same thing. A portion of the income derived by these municipalities from taxes is immediately set aside as a sinking fund to extinguish that debt. *Unless the railroad company is permitted to earn sufficient margin over and above its dividend requirements*—assuming always that its dividend requirements are reasonable—*it not only loses its credit, but it is also unable to meet the class of expenditures that I have been discussing without the sale of additional bonds*, the placing of additional mortgages on its property, and the consequent transferring of a certain burden upon posterity which ought to be borne by the present generation. That is what has been done in England. The policy of paying everything out of its dividends, putting nothing back into the property out of earnings, has been pursued to an extent there that has made the capitalization of those railroads so large that it is almost impossible for them to earn anything on it."

President Willard asserted (docket 3400, p. 2181):

"When new capital is issued by the railroad, it ought to be because of expenditures which will take care of that particular capital. Otherwise, the issuance of such capital becomes a burden on that already existing, and you cannot put additional burdens on the securities already issued without destroying to that extent your credit. Conservative management means the holding up of credit."

President Ripley declared in his evidence (docket 3500, p. 93):

"It has frequently been stated that it has been the policy of the Pennsylvania Railroad to put one dollar into the property for every dollar of dividends paid, and I think that is a very modest and very excellent plan."

And President Willard, in speaking of the policy which has been pursued on the Baltimore and Ohio of expending upon the property 50 cents for every dollar paid in dividends, declared (docket 3400, p. 2168):

"A more liberal policy on the Pennsylvania Railroad *has made that what it is*. So I think what we have done is the very minimum we can do if we are to maintain the property and maintain dividend payments, and it is certainly most essential that we should, if we are to raise money on proper returns in the future."

President McCrea himself did not hesitate to assert (docket 3400, p. 2134):

"There is not another road in the world that has as good physical condition as the Pennsylvania Railroad."

Such testimony but accords with the known fact that the name "Pennsylvania" is synonymous in every civilized land, with railroad management, operation, and financing of the highest standard, and while considering this serious question of the surplus, *it is well for us to hear the evidence of the president of the Pennsylvania concerning the policy which has made that road what it is*, and to consider whether it would not have been better for the country if similar methods had been pursued upon every road in our land,—and if so in the past, why not in the future, for our country is yet very young? We have fortunately in this record the benefit of the testimony of the highest official of the Pennsylvania system, President McCrea. He testified, referring to the Pennsylvania (docket 3400, p. 1954):

"Its ability to sell its stock and bonds has been due to the fact that it has not merely paid dividends of 6 per cent or 7 per cent, chiefly the former, *but that it has been able to show at the end of the year large surplus earnings which it has put back into the property*. When investors have been asked to purchase its stock or bonds, the company has been able to show that it was then in receipt of enough income to enable it to make a fair return on the securities that it proposed to issue, *even if the proceeds of these securities could not be so invested as to enable the company to derive an immediate return thereon*. In other words, *the existence of the surplus earnings established a credit which enabled the company to secure the additional funds necessary to make improvements or additions as these became necessary*."

He had previously briefly explained the Pennsylvania surplus system, testifying (docket 3400, p. 1950):

"The Pennsylvania Railroad Company has for many years past, as a result of its operations, realized a substantial surplus in each year over and above the amount required to enable it to meet its interest charges and pay moderate dividends on its stock to its stockholders. This surplus has varied in amount from year to year. For the last ten years the average has been about \$12,000,000 a year, practically all of which has been expended on the property for the purpose of enabling the company to conduct its operations more safely, more efficiently, and more cheaply."

He also testified (docket 3400, pp. 1951-52):

"Had these earnings not been available, and had they not expanded for the purposes indicated, the Pennsylvania Railroad would today be a very different railroad and would have been wholly unable to render the service to the public which it is today rendering. The accumulation of these

surplus earnings which have been thus expended *has only been possible because the rates of freight in force since the passage of the Interstate Commerce Act have been sufficient to realize for the company amounts in excess of its expenses, taxes, interest, and dividends.*"

This last sentence is the key to the success of the Pennsylvania Railroad system, and it is suggested should be kept ever in mind by the members of the Interstate Commerce Commission to be used for the guidance of the other roads of the country until in the interests of the public they have been brought to the Pennsylvania standard of efficiency and safety.

This is no vague theory based on stock jobbing quotations; it is no "dream of a dreamer, who dreamed that he dreamed." It is sworn evidence of facts which portray the real scientific management, the best the railroad world has ever known.

There are problems, grave and difficult, yet unsolved in the railroad situation, some of which this Commission may in time succeed in settling or in aiding satisfactorily to adjust, such as:

- (1) *Uniform classification;*
- (2) *A generally accepted standard for the determination of the reasonableness of a rate;*
- (3) *The exact proportion of earnings, over and above fixed charges, cost of operation and reasonable dividends, which should, in the interests of the nation's continued and consistent growth in transportation facilities, be carried into surplus for the development of the property;*
- (4) *The proportion of this which should be capitalized and under what circumstances;*
- (5) *The just and reasonable rate of return on capital investment and method for its computation;*

(6) *A system of consolidation which will preserve the benefits of private ownership and, in the interest of good service to the public, at reasonable cost, prevent unduly large revenues upon the part of carriers particularly favorably located, and poverty on the part of others serving equally important sections of the community; etc., etc., etc.*

With these difficult problems and many others the situation is teeming. They will not all be settled in a year, a decade, or a generation, and perhaps not one for many years, and doubtless some never finally as the evolution of our world, our peoples, their civilization and their needs, will ever demand constant readjustment thru the cycles of the centuries.

It is suggested that the errors of judgment of some of the complainants lie in the fact that they believe the big and difficult problems of the railway situation in this country, and some of which have been stated above, are capable of immediate arbitrary settlement by some rule of thumb. This fundamental error is the trail of the dead herring thru their case.

Then there are many people who have been misled by a superficial reading of the decisions of the courts into jumping to the conclusion that the legal rate of interest is the limit of reasonable maximum return placed by the courts upon capital invested in public service corporations, wholly overlooking the point that no court of appellate jurisdiction has ever so held, and that the expressions concerning 6 per cent and other similar percentages have arisen in cases where the issue was the constitutional one, whether the investor was being deprived of his property or its proper use without due process of law. *This error has been responsible for much of the confusion in this railway surplus earnings problem.*

We now turn to the second proposition:

II.

Under the law as enacted by Congress the responsibility for the future credit of American railways rests upon the Interstate Commerce Commission, and this credit cannot be maintained unless the Commission authorizes a substantial increase in revenue.

We are living so close to the revolution that has been brought about by the recent legislation of Congress that it is difficult to see it in adequate perspective, difficult fully to realize the true situation, so difficult indeed that at first blush the proposition that the credit of American railways rests upon the Commission seems startling. Yet President Taft has not hesitated to say that *the Commission "have in their hands for the weal or woe of general business a power that sometimes makes one tremble."*

When the situation is analyzed it cannot be logically disputed, but that this Commission, "the Supreme Court of the Railroads," as it has recently been called, has been given the power of maintaining or destroying the credit of the American railway system, which has already been seriously impaired as a result of the agitation and other causes operating through recent years, for it is a truism that he who is possessed of power is responsible for its exercise. Just as the courts of the United States are responsible for the maintenance of the due and proper administration of justice and of a republican form of government, so is this Commission weighted with the grave responsibility of maintaining

the development of the American railway system, which cannot continue properly to develop if the rates which this Commission decides the carriers may charge are inadequate "to invite the flow of capital necessary to enable railway development to keep pace with the growth of the country."

Judge Knapp's Dictum.

Chairman Knapp clearly saw that this was the crux of the situation when, in 1908, in combating some of the wild theories then in vogue, he said:

"Whatever may be our national or state policy in other respects, whatever regulations may be prescribed or obligations imposed, there must be the opportunity to charge rates which will give sufficient earnings to make the business fairly profitable and to attract the needful capital for its ample extension."

In the presidents of the great systems, who testified in the Eastern and Western hearings, the Commission had before it four of the ablest railroad experts in the world, and who placed at the service of the Commission their unequalled judgment and experience and with the utmost candor on oath declared the relentless facts as to the waning credit of the American railway system, and the future of which now depends upon the course of this Commission. Said President McCrea, after explaining in detail the inability to market railway bonds at a reasonable rate of interest (docket 3400, p. 2111):

"Today, in view of the various uncertainties that are surrounding the country, through decisions of the Supreme

Court and interpretations of the Interstate Commerce Law, and a number of other things going on, there is a large amount of uncertainty in which everybody is about marking time."

President Willard declared (docket 3400, p. 2207):

"Unfortunately, *I am unable to see any way* in which we can maintain the policy that we have been maintaining, and which, in my opinion, ought to be maintained, *unless this increase of rates is granted*. That is the conclusion I am forced to reach."

He also asserted (pp. 2159-60):

"One more thing I would like to say, with all respect to the Commission—certainly with no desire to be in any sense other than that—that *I believe in railroad matters today there is not any single element that is having such an effect upon railroad credit or upon the feeling of railroad managers as the effect that this decision may possibly have*."

And President Brown declared (docket 3400, p. 2361):

"But with respect to the capital remaining to be secured for these improvements, *I can confidently say that the ability of the railroads to obtain it depends upon the ability of the companies to secure increases in revenue* through increased freight rates, commensurate with the recent increases in expenses."

Mr. Commissioner Lane asked President McCrea this question (docket 3400, p. 2112):

"Let me put it this way: Suppose these questions of decisions and interpretations of law were out of the way, would

you not have, in your judgment, a much better market for your good securities within a reasonable time?"

And the following colloquy ensued:

"Mr. McCREA: Either much better or much worse, sir.

"Commissioner LANE: Depending on the decisions?

"Mr. McCREA: *Depending on the decisions*."

The Bond Situation.

Questions were repeatedly asked the presidents by members of the Commission. The following from the record (docket 3400, pp. 2107-2111) is particularly illuminating of the situation, with its rapid fire of interrogatories from both Mr. Commissioner Lane and Mr. Commissioner Prouty:

"Commissioner LANE: Let me interrupt there to ask this question: What reason have you to give showing that railroad securities at the present time and under existing rates are not attractive to investors?"

"Mr. McCREA: Only our own experience and my observation of what it has been with other roads. For perhaps the last twelve or fifteen months, I should say, there has been absolutely no bond market of any kind.

"Commissioner LANE: That is to say, you could not sell bonds?

"Mr. McCREA: Could not sell bonds; there was absolutely no market whatever.

"Commissioner LANE: What efforts have been made to sell bonds for fairly capitalized roads, that have failed?

"Mr. McCREA: I can only answer so far as we are concerned. We have gone to consult bankers about raising money on some of the branches, and we have had these

bonds for sale, and they simply say there is no use in talking about it, there is absolutely no market. The last time I went to one of them, we had sold three and one-half millions, if I recollect it right, of Vandalia bonds, which are really gilt-edged bonds, and they told me then, ten days afterwards, that they still had a million and a half dollars of these bonds in their safe.

"Commissioner PROUTY: What is the rate of interest?

"Mr. McCREA: 4 per cent.

"Commissioner PROUTY: Suppose they had been 5 per cent bonds?

Mr. McCREA: 5 per cent bonds probably would, of course, go very much better, but that so far for a bond is too high a rate of interest. That would carry with it the rate on the stock; when it came to the sale of the stock it would force the dividends that would be necessary or the returns that would be necessary on the stock to a very high point. The two go hand in hand.

"Commissioner LANE: That is to say, a low rate of interest on bonds justifies a low dividend on stock and a high rate of interest—

"Mr. McCREA: They bear a relation; they unquestionably bear a very close relationship. In other words, if I can sell 3 per cent bonds I could perhaps sell 5 per cent stock—these figures being only comparative. If I sell 4 per cent bonds or 3½ per cent bonds—I do not want to be pinned down to a particular illustrative figure such as I am giving—perhaps then it would mean 6 per cent. If you have to sell 5 per cent bonds, to sell any stock it would run up to 7 or 7½ per cent dividends, in my judgment.

"Commissioner LANE: So far as basing the rate is concerned, the rate as charged to the shipper, it is better to have a railroad largely bonded, with a large issue of bonds at a low rate of interest than a large issue of stock?

Mr. McCREA: I am not sure about that. I think that is pretty poor—that is not good financing, because the interest

on your bonds is an absolute fixed charge, and if you fail, through some radical disturbances which happen every now and then, to be able to meet your interest everything is subject to the lien of that bond, and your stock may be wiped out; whereas, if you have a large amount of stock and a small amount of bonds, and your recuperative power is good, you may not be in danger—if every year or two years you are to forego paying any dividends. Your recuperative power is tremendous under those circumstances.

"Commissioner LANE: You have a greater leeway?

"Mr. McCREA: Yes, you have a greater leeway. I think a great many States will not allow you to issue bonds in excess of 50 per cent of your stock.

"Commissioner LANE: To pursue my original question just a little bit further. I have understood that there was a very large issue of stock and bonds made by the railroads in this country during the last two years, and a very considerable amount during the last three years. You bring forward the proposition that it is necessary to increase rates so as to more firmly establish credit and enable you to get the money with which you can build facilities necessary for the carrying on of the transportation necessities of the country. Is it a fact that any first-class security, at a reasonable rate of interest, has gone begging and that there is no market in the United States or in Europe for a good bond of a good railroad at a reasonable rate?

"Mr. McCREA: Of course, market conditions vary from time to time, but I should say that there has been no time since the financial difficulties in 1908 when there has been a good bond market or a good stock market.

"Commissioner LANE: You mean as an investing market, not as a speculative market?

"Mr. McCREA: Oh, yes. We are talking of purely an investing market; that is, where each railroad company has its own stock to sell for the purpose of raising money to do

certain things. I do not mean the speculative side of it at all."

President Brown, in dealing with the bond situation, presented a concrete illustration. He said (docket 3400, pp. 2361-62):

"The situation cannot perhaps be better illustrated than by reference to the recent attempts of the Michigan Central Railroad to market in this country and in Europe an issue of \$17,000,000 of its four per cent debentures.

"The low bonded indebtedness of the Michigan Central and the previous stability of its earnings should have made such an issue attractive to any security market. It has been impossible, however, either in this country or in Europe, to secure any bid for these securities which could be considered. The best bid which the company has been able to obtain was one recently made of 87 for the entire issue. The acceptance of this bid would have involved a discount of over \$2,250,000 on an issue of \$17,000,000, and of course could not be considered. The only alternative is to borrow money on short time notes, and the result of an effort to do this shows that it will be necessary to pay approximately, and in my opinion, fully six per cent interest on such notes. I believe that this general condition will continue to exist until the revenue of the companies can be increased through an increase in rates."

President Willard declared (docket 3400, pp. 2160-61):

"I happened to be in Berlin and in London a short time this summer, and while there I met men who have much to do with the furnishing of money to the Baltimore & Ohio Railroad. I found in every instance the thing that they asked first, the thing that they wanted to know about first,

was what would be the outcome of the new condition of affairs. * * * This thought was all the time evident: that that was a matter that was in their minds, and until that was disposed of in some manner things waited. There is a feeling of hesitancy, and that feeling today dominates the railroad situation."

Facts versus Theories.

These are sworn facts, actual illustrations of the condition existing. How are they met by those shippers who have seen fit to be represented in this hearing? Not by concrete facts, not by the offer of some syndicate to take bonds at a reasonable figure, but by a mass of theorizing, by reams of theoretical figures and a volume of stock market quotations, to prove that the credit of the railways was never better than today. One pet theory is that the credit of most of the American railways is relatively better than of the District of Columbia and Commonwealth of Massachusetts, and the argument is advanced that the *increase* in the rate of return upon railroad bonds demanded by the investing public is not so great relatively as the percentage of increase in the matter of District of Columbia and Massachusetts bonds. We have no evidence before us of the condition surrounding the issuance of the District of Columbia and Massachusetts bonds, and it is, in consequence, impossible to make a comparative study of those bonds with the bonds of the carriers; but we are indebted to our opponents for bringing out very clearly and forcibly, for it is the major premise in this theoretical argument of theirs, the fact that there has been a large increase in the "basic rate of re-

turn" demanded by the investing public on railroad bonds; indeed, an increase of about 10 per cent on bonds of the New York Central and Pennsylvania, from 1904 to 1910 inclusive. (See on this point table No. 19 in the brief for the counsel for I. C. C.) *If this be true, it furnishes a most substantial argument for an increase in rates commensurate with the increased cost of capital to the carriers, and if this higher rate is necessary upon bonds, it will necessarily be reflected in the basic rate of return demanded upon stocks of the corporations issuing the bonds, for the stockholder faces a much greater hazard than the bondholder.*

In so serious a matter as the financing of the transportation systems of this country, we cannot give serious consideration to vague theories. We must face facts as they exist, and in this record they have been fully presented, and with the utmost frankness, by the presidents of four of the greatest systems in the country, men who would probably have preferred to remain silent had it not been necessary to disclose the true situation.

A most significant table of depreciation in the value of railroad securities during the calendar year 1910, the year of revolution in the control of rate making, appeared in the issue of the *Wall Street Journal* of January 5, 1911, showing in detail as to fifty leading carriers the depreciation as to each, and which, on these fifty railways alone, totals for the calendar year 1910 the enormous loss in market value of \$632,224,000, or 16.06 per cent of their total par value, while fifty

leading industrials, also tabulated, show a depreciation of but 12.27 per cent of their aggregate par value.

Can it be doubted, in the face of such facts, that it is necessary for the companies to maintain an adequate surplus in order to maintain their credit, to take care of obsolescence, and to keep pace with the demands of the public, not only for increased but for better transportation facilities? President Ripley has said (docket 3500, p. 5, of pamphlet reprint of Mr. Ripley's testimony):

"We should be able to take in more *partners* as stockholders instead of taking in more *creditors* as bondholders. But that has not been always possible; in fact, it is very seldom possible, either with us or with any railroad company."

And President Willard forcibly said (docket 3400, p. 2276):

"I think that the duty will rest with the Commission, as I view it, to see *that such return is made to the railroad as will cause the public to feel that our securities are attractive.*"

How is this to be brought about? Dare we, in face of the facts as they exist, assume that the present market for bonds represents but a temporary condition, and that there is no basic, fundamental cause back of it all (such as higher money rates and the causes back of that), which will make it permanent if the situation is not relieved by the Commission permitting adequate rates to go into effect? Substantially, this question was put to President McCrea by Mr. Commissioner Lane when he propounded the following interrogatory (docket 3400, p. 2113):

"Supposing that that is so—though I am not dealing with that phase of the proposition at all, but with other phases—and supposing that it is necessary to have an increased earning so as to maintain credit, I ask, should that argument be urged if the conditions which made a bad market now are but temporary?"

President McCrea answered as follows:

"Yes, sir, I think so. The railroads necessarily live from hand to mouth. They cannot afford to discount the future. If experience demonstrates that my conclusions and the conclusions of these railroad gentlemen are in error and the rates have gone too high, I suppose, under the power that is given you, they can be ruled as being unjust or whatever the term is; but I do not think, at least, that the railroads can afford to temporize in the way of discounting a possible future. We have to live from day to day and treat the conditions as they are from time to time."

Again, President McCrea said, discussing another but similar phase of the situation (docket 3400, pp. 1960-61):

"In my judgment, therefore, *it would be wholly unsafe to assume that the company will, as the result of the growth of its business, be enabled to recoup itself for the depletion in its surplus revenue which is certain to result from a continuance of the present operating cost.* Under these conditions, I feel that *it is essential* in the interest of the public and of shippers, as well as of the railroad company itself, that it should be permitted to secure through an advance in rates the amount which represents its additional outlay on account of the advance in wages, in order that its surplus earnings may continue at approximately the rate at which they have been running in the past. *It will require the ex-*

penditure of more than these surplus earnings to enable the company to keep pace with the demands of the public and of its shippers, and unquestionably additional capital must be secured in the future. If we are to obtain this, we must not only be in a position to make a fair return on it, but we must be able to show a margin of safety in our earnings."

President McCrea also called attention at one point in his testimony to the method originally obtaining in the financing of railroads. He said (docket 3400, p. 2121):

"Even in your days, you can recollect what was true in our own territory, that you could not get a new railroad built when you were allowed to sell a bond of \$1,000 and give a bonus of stock of a thousand dollars; you could not even sell them under those conditions unless the community through which they passed voted contributions of so much a mile, and a very large part of the railroads west of the Ohio River were built under those conditions, and those conditions governed within the past 25 years. How the development is going to be done, where they have not got any and where the population has to follow the development, I do not know."

President Willard declared (docket 3400, p. 2186):

"It seems to me it would be better to face the possibilities of excess earnings on the part of some of the railroads—which in any event must all be spent under the general eye of the Commission—than to face the possibility of a deficit, *which would mean stagnation.*"

And he also pointed out that in the last analysis it will be mainly the public who will suffer through a

stoppage of transportation developments resulting from impaired credit. He said (docket 3400, p. 2186):

"If, for any reason, it is thought wise to depart from the practice that has obtained in the past when estimates have shown that because of increased wages or other increased expenses it was necessary to increase the income, and such action has been taken—if that practice is to be departed from, and the experiment is to be tried, and that shows an inability on the part of the company to maintain its payments and maintain the property, it seems to me that *in the end the people will be the ones that will suffer more than the comparatively few stockholders, however numerous they may actually be. The individual stockholder may be obliged to accept, for a short period, a reduced dividend; but in the meantime developments would stop because credit would be impaired.*"

President McCrea pointed out that if stagnation results, the railway does not stand still, but drifts backwards. He said (docket 3400, p. 2137):

"There is no such thing as a big railroad standing still. When it does it commences to drift backwards right away. If this company is expected to serve the community and keep up to its present standard, you have to go straight ahead and continue to make large expenditures."

It is plain where the responsibility for the future exists. Can the carriers do more than they have in the present proceedings to make the situation clear? Their officers would fail in the discharge of their duty if they did not bring home to the Commission clearly, forcibly, and plainly the Commission's grave responsibility, for it is not a fiction. It is not a theory. It is a plain,

solemn reality, and it has nowhere been more clearly expressed than by President Willard when he declared (docket 3400, pp. 2185-86):

"Today a new condition of affairs has come about. The credit of the American railroads has been placed in the hands of this Commission. There has been taken from the hands of the owners the responsibility, the burden, of maintaining the credit of the American railroads to such an extent that it may [not] be possible for them to obtain money in the future on terms such as the people ought to pay. In the end, of course, the people pay the rates that pay the interest on the bonds. In my opinion, the credit should be such that the railroads can obtain money on the most favorable basis. That should be the measure of credit. They should get money on the most favorable basis, and *that credit rests in the hands of this Commission.*"

These solemn words but reflect the opinion of President Taft, when on October 1, 1910, he asserted that the Commission "have in their hands for the weal or woe of general business a power that sometimes makes one tremble."

We close with the potent words spoken in 1908 by President Judge Martin A. Knapp, of the new Court of Commerce, then the chairman of the Interstate Commerce Commission, and uttered at a time when the sole responsibility as to the rate situation, which directly controls the revenues, had not been placed by Congress upon the Commission and when he was merely declaring the fundamental principle which ought to govern the rate situation:

"Whatever may be our national or State policy in other respects, whatever regulations may be prescribed or obli-

gations imposed, there must be the opportunity to charge rates which will give sufficient earnings to make the business fairly profitable and to attract the needful capital for its ample extension. * * *

"Without regard to the personnel of railroad officials, without regard primarily to the interest of the stockholders, but *in the interest of public welfare and national prosperity*, we must permit railway earnings to be adequate for railway improvement at advantage and profit."

The situation rests in the hands of the Commission.

CLARENCE BROWN,
General Solicitor,
LUCIEN HUGH ALEXANDER,
Special Counsel.

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BEFORE THE INTERSTATE
COMMERCE COMMISSION

DOCKET NO. 3400

RE INVESTIGATION

OF

PROPOSED ADVANCES IN FREIGHT
RATES BY CARRIERS IN OFFICIAL
CLASSIFICATION TERRITORY

BRIEF ON BEHALF OF TRAFFIC
COMMITTEE OF COMMERCIAL ORGANIZATIONS
OF THE ATLANTIC SEABOARD

LOUIS D. BRANDEIS
COUNSEL

Boston, January 3, 1911

THE GREAT QUESTION INVOLVED

THE RAILROADS' POSITION

COMMISSIONER LANE. Is there any reason to believe that these increases would stop with the present increase if it should be allowed?

PRESIDENT WILLARD (of the Baltimore & Ohio). Increases in rates?

COMMISSIONER LANE. Increases in rates, yes, sir.

PRESIDENT WILLARD. No, I think not. I think the tendency of rates will be to continue upward.

COMMISSIONER LANE. You think there will have to be a progressive increase?

PRESIDENT WILLARD. Yes, sir.

(Record, p. 2188.)

THE SHIPPERS' POSITION

As an alternative to the railroads' practice of combining to increase rates we offer co-operation to reduce costs. Instead of a dangerous makeshift, we offer a constructive policy — scientific management, under which as costs fall wages rise.

LET THE CONSUMER BEWARE

Of the vicious circle of ever increasing freight rates, and ever increasing cost of living.

FEB 25 1946 PCR

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RE INVESTIGATION

OF PROPOSED ADVANCES IN FREIGHT RATES BY CARRIERS IN OFFICIAL CLASSIFICATION TERRITORY

BRIEF ON BEHALF OF SHIPPERS AND CONSUMERS

PART FIRST

I. PRELIMINARY STATEMENT

About May, 1910, the railroads operating within official classification territory (that is, east of the Mississippi and north of the Ohio and Potomac Rivers), acting in pursuance of a common purpose, filed with the Interstate Commerce Commission new tariffs, seeking approval under the provisions of the Act to Regulate Commerce as amended June 18, 1910. The aggregate mileage of these railroads in 1909 was 52,054 miles, out of the total mileage for railroads of the United States of 237,867 miles. The aggregate freight revenues of these railroads for the calendar year 1909 were \$754,429,485. (Record, p. 1378.)

These railroads (Record, pp. 1377, 1378) have estimated that the additional revenues resulting from the rate increases provided for in the proposed new tariffs

would amount for a year to \$27,171,444. The estimated increases on the New York Central Lines, Pennsylvania System, Baltimore & Ohio, Erie, Lehigh Valley, and Delaware, Lackawanna & Western, aggregate \$20,803,188. Of this \$20,803,188, \$17,477,577, or more than 84 per cent, would be derived from class rates, and only \$3,325,631, or less than 15 per cent, would be derived from commodity rates.

The total tonnage for the calendar year 1909 on the railroads named was 626,321,975. Of this tonnage less than 8 per cent—or 47,497,048—moved under class rates. Of the freight revenue of these railroads for the calendar year 1909 (\$477,422,075), nearly 22 per cent (\$103,271,823) was derived from class rates.

The class rates govern the shipments of over four thousand articles of commerce, including most of the necessities of life and articles of competitive commerce.

The increase in class rates proposed by the new tariffs are serious, ranging from 20 to 29 per cent in the first, second, and third classes (which supply a large part of the total revenue from class rates); from 14 $\frac{3}{4}$ to 19.2 per cent in the fourth; from 10 to 13.6 in the fifth; and from 8 to 11.1 in the sixth. For instance, the rates from

NEW YORK OR BOSTON TO CHICAGO

A. ALL RAIL

Class	Present rate	Proposed rate	Per cent increase
1	75	90	20
2	65	78	20
Rule 25	55	66	20
3	50	60	20
Rule 26	40	48	20
4	35	40	14.3
5	30	33	10
6	25	27	8

B. ALL RAIL DIFFERENTIAL LINE (NAT'L DESP.)

BOSTON TO CHICAGO

Class	Present rate	Proposed rate	Per cent increase
1	70	85	21.4
2	61	74	21.3
Rule 25	52	63	21.1
3	47	57	21.3
Rule 26	38	46	21.1
4	32	37	15.6
5	28	31	10.7
6	24	26	8.3

C. OCEAN AND RAIL

Class	Present rate		Proposed rate		Per cent increase	
	N. Y.	Boston	N. Y.	Boston	N. Y.	Boston
1	65	70	80	85	23.1	21.5
2	57	61	70	74	22.8	21.3
Rule 25	48	52	59	63	22.9	21.1
3	44	47	54	57	22.7	21.3
Rule 26	35	38	43	46	22.9	21.1
4	31	32	36	37	16.1	15.6
5	26	28	29	31	11.5	10.7
6	22	24	24	26	9.1	8.3

D. RAIL AND LAKE

Class	Present rate		Proposed rate		Per cent increase	
	N. Y.	Boston	N. Y.	Boston	N. Y.	Boston
1	62		77		24.2	
2	54		67		24.1	
Rule 25	46		57		23.9	
3	41		51		24.4	
Rule 26	33		41		24.2	
4	30		35		16.7	
5	25		28		12	
6	21		23		9.5	

E. CANADA ATLANTIC

Class	Present rate		Proposed rate		Per cent increase	
	N. Y.	Boston	N. Y.	Boston	N. Y.	Boston
1	52	57	67	72	28.9	26.3
2	46	50	59	63	28.3	26
Rule 25	39	42 $\frac{1}{2}$	50	53 $\frac{1}{2}$	28.2	25.9
3	35	38	45	48	28.6	26.3
Rule 26	28	30	36	38	28.6	26.7
4	26	27	31	32	19.2	18.5
5	22	23	25	26	13.6	13
6	19	20	21	22	10.5	10

PHILADELPHIA TO CHICAGO

A. ALL RAIL

Class	Present rate	Proposed rate	Per cent increase
1	69	84	21.7
2	59	72	22
Rule 25	50	61	22
3	48	58	20.1
Rule 26	38	46	21.1
4	33	38	15.2
5	28	31	10.7
6	23	25	8.7

B. OCEAN AND RAIL

Class	Present rate	Proposed rate	Per cent increase
1	61	76	24.6
2	53	66	24.5
Rule 25	45	59	24.4
3	44	54	22.7
Rule 26	35	43	22.9
4	30	35	16.7
5	26	29	11.5
6	21	23	9.5

C. RAIL AND LAKE

Class	Present rate	Proposed rate	Per cent increase
1	56	71	26.8
2	48	61	27.1
Rule 25	41	52	26.8
3	39	49	25.6
Rule 26	31	39	25.8
4	28	33	17.9
5	23	26	13
6	19	21	10.5

BALTIMORE TO CHICAGO

A. ALL RAIL

Class	Present rate	Proposed rate	Per cent increase
1	67	82	22.4
2	57	70	22.8
Rule 25	48	59	22.9
3	47	57	21.2
Rule 26	38	46	21.1
4	32	37	15.6
5	27	30	11.1
6	22	24	9.1

B. OCEAN AND RAIL

Class	Present rate	Proposed rate	Per cent increase
1	59	74	25.4
2	51	64	25.5
Rule 25	43	54	25.6
3	43	53	23.3
Rule 26	34	42	23.5
4	29	34	17.2
5	25	28	12
6	20	22	10

C. RAIL AND LAKE

Class	Present rate	Proposed rate	Per cent increase
1	54	69	27.8
2	46	59	28.3
Rule 25	39	50	28.2
3	38	48	26.3
Rule 26	30	38	26.7
4	27	32	18.5
5	22	25	13.6
6	18	20	11.1

II. THE BURDEN OF PROOF UPON THE RAILROADS

The Act of Congress, June 18, 1910, amending Section 15 of the Act of Feb. 4, 1887 (the Act to Regulate Commerce) provides that:

"At any hearing . . . on a rate sought to be increased after the passage of this Act, the burden of proof to show that the . . . proposed increase[d] rate is just and reasonable shall be upon the common carrier . . ."

Congress has thus made it as clear as language can make any proposition, that

First: The railroads have the burden of proving that the proposed rate is both just and reasonable.

Second: The railroads must prove as to each rate that the proposed increased rate is just and reasonable. In other words: the question whether the proposed increased rate is just and reasonable must be considered separately as to each rate for each article of commerce. It cannot be determined at wholesale by general consideration.

Furthermore, the increased rate cannot be held to be just and reasonable upon a showing merely that the railroads have been subjected to certain additional expenses; nor even by showing a need upon the part of the railroads of greater income. The need of the shipper and of the consumer also must be considered in determining whether an increased rate is just and reasonable. It must be shown that the rate is not unduly burdensome upon either the shipper or the community.

If the increased rate is sought to be justified on the ground that the carrier needs greater income, it must also

be shown that the burden of the greater rate is justly distributed as between all the traffic of the railroad, -- on the one hand as between freight and passenger service, and on the other hand as between the various articles of commerce, -- and the several communities to be affected.

We submit that the railroads have failed utterly to sustain their burden of proof; have failed so completely, that upon their own evidence, independently of that submitted in reply on the part of the shippers, the application of the railroads for approval of the new tariff should be denied.

III. THE CLAIMS OF THE RAILROADS

Although the burden of proof is upon the railroads to show that the proposed increases in rates are just and reasonable, their counsel have throughout these hearings refrained from stating the grounds upon which they rest their contention. But the testimony introduced by them, particularly that of President McCrea of the Pennsylvania, President Willard of the Baltimore and Ohio, President Brown of the New York Central, and Vice-President Stuart of the Erie, shows the contention of the railroads to be substantially this:

First: That there is need of greater net income which cannot be secured otherwise than through increases in rates; because the possibilities of economy in operation have (at least for the leading railroads) been practically exhausted.

Second: That the proposed increases in freight rates (which are confined practically to horizontal increases of long-distance class rates) are each and all proper as a means of raising such additional revenue.

Third: That the present need of greater income is due to the rise in operating expenses caused mainly by the recent advances in wages and the new burdens imposed through Acts of Congress, such as laws providing for safety appliances, laws limiting the hours of labor, and the laws under which this Commission has standardized railroad accounting and required fuller reports.

Fourth: That the need for greater income is imperative; because in order to secure the additional capital from time to time required for desirable extensions and improvements the present rates of dividend must be maintained or increased, and in addition, surplus earnings must be set apart each year equal to at least one-half the amount paid out for dividends.

PART SECOND

THE RAILROADS' CONTENTION THAT THE POSSIBILITIES OF ECONOMIES IN OPERATION HAVE BEEN EXHAUSTED

The railroads contend that they have practically exhausted the possibilities of economies in operation.

(a) PRESIDENT MCCREA of the Pennsylvania Railroad said:

"So far as concerns economies which will result from reduction in grades, increasing hauling capacity of locomotives and increased capacity of cars, the Company is to-day already practically deriving the full benefits from those which are possible in this direction due to repairs heretofore made, for we have practically completed our grade levels, and have probably reached the maximum size of our cars and engines. . . . (P. 1957.)

Mr. BRANDEIS. . . . Now, Mr. McCrea, one other question. You stated that you thought the limit of increase in efficiency and resultant economy was practically reached.

Mr. MCCREA. I did, sir. (P. 2025.)

Mr. BRANDEIS. . . . and that those methods of increasing efficiency — those more or less remunerative investments of property through increased efficiency — had, so far as you were aware, exhausted the improvements in the line of efficiency that you deemed possible?

Mr. MCCREA. In the line of economies. . . . You said 'efficiency'; I say 'economies.' That is about true. I said 'practically so'; that is my belief." (P. 2026.)

(b) PRESIDENT WILLARD, of the Baltimore and Ohio Railroad, said:

"Commissioner LANE. Do you think there should be an increase in rate every time there is a considerable increase in wages?

Mr. WILLARD. I think that depends. In my opinion the two things will be found to be very closely related to each other in the

future, and for the reason stated by Mr. McCrea yesterday, I think the possibilities of further operating economies have been pretty well exhausted. . . . I must confess that I am unable to see very much more that can be done in the way of reducing the cost of operation." (P. 2182.)

In substantially every other branch of manufacture, not controlled by trusts, including those much older than railroading and in which there has been the persistent prodding of competition, nearly every year still records important new economies. And (except where the tendency to reduce costs has been thwarted by an extraordinary rise in raw material or the control by a trust of some of the instruments of production) these economies in private manufacturing have been so great that they have generally been sufficient to prevent any rise in selling prices in spite of large increases in wages paid.*

The contention that the possibilities of economy in railroading have been practically exhausted is contrary to all human experience in other lines of activity. Why then should the manufacture of railroad transportation be supposed to have reached the irreducible and now unmain-
tainable minimum of cost?

The railroads have introduced certain large economies within the last fifteen years; but these have been accomplished, mainly, through large expenditures of capital, as in leveling grades, straightening curves, strengthening bridges and road beds, making possible the use of larger cars and engines, and thus imposing also the great costs of the new equipment.

But advances in the art of transportation have been relatively few. Striking instances of failure to introduce advanced methods must be obvious to any careful observer. Most conspicuous perhaps is the persistence of the old methods of handling baggage and freight; for,

with few exceptions of very limited scope, the loading and unloading of ordinary freight are still conducted by hand substantially in the same manner as at the birth of railroading.

Indeed, the most marked advances made in connection with railroading in recent years have been forced upon the roads by law, against their strenuous opposition. This is true of the safety appliances, the abolition of rebates and passes, and, to a great extent, the abolition of grade crossings.

By some railroad managers the duty of finding new avenues to economy has been recognized, as shown by the following passages from the Report to Stockholders of the Lehigh Valley Road Company for the year ending June 30, 1910 (pp. 6, 19):

"It may be pointed out that the increases in revenue have occurred, with one exception, in each month of the year during a period when the general business of the country has not, to any appreciable extent, advanced, but on the other hand has during the last few months shown some evidence of receding. While the solicitation of both passenger and freight traffic has been actively carried on in competition with other lines, the increase may in large measure be ascribed to the high character of service rendered shippers and the traveling public, your management having consistently sought to improve the service, believing, as has undoubtedly been the case, that the revenues would respond to the improvement in the service.

Notwithstanding the high character of the service rendered and *with a liberal allowance for maintenance and depreciation of the property, the operating expenses* have increased but \$1,108,410.93, or 5.39 per cent, over the preceding year, and are actually lower than for the fiscal years 1907 and 1908, when the earnings closely approximated those of the present year. It is particularly gratifying to observe that the expenses have been so controlled that the major portion of the increase in gross earnings has been retained in the net operating revenue, making the total of the latter \$929,134.85 in excess of the best previous year. It is also pertinent to state that these results have been attained during a year when practically all

the elements of cost entering into the expense of operation have materially advanced. One of the most serious of these is the increase in rates of wages granted to all classes of employees. While this has affected the results for the year it has only been in the latter months, as the more important increases did not apply until after January 1st.

The ratio of operating expenses to operating revenues was 59.95 per cent, a decrease of 2.14 per cent, as compared with the preceding year. . . .

If for any reason, however, the gross revenues cannot be so increased, the constantly increasing cost of the service will diminish the net revenue of the Company and it becomes, therefore, of the utmost necessity to effect the greatest possible economies in operation. This problem of keeping the expenses of the Company within reasonable and well-defined limits, without any impairment of its physical well-being, has been given the most careful study and attention by your management, and many improved methods and economies have been introduced which have materially reduced the units of cost in various branches of the service."

ECONOMIES THROUGH SCIENTIFIC MANAGEMENT

It is undoubtedly true that even under the system of management prevailing among railroads, numerous economies are possible upon each railroad which, if introduced, would result in very large savings to that company, — savings far greater in amount than the added expense due to the recent increases in the wage scale. If, for instance, each railroad were now to adopt in each department the best methods and practices now prevailing in any other American railroad, it is clear that the operating expenses of each company would be very largely reduced.

But a far greater measure of economy would result to each company from the introduction of scientific management by which the efficiency of labor, plant and machinery, and materials would be very largely increased. Scientific management increases efficiency; and economy comes as a biproduct.

The science of management is new. Some of its principles were discovered and applied a quarter of a century ago by Fred W. Taylor in the Midvale Steel Works. Other principles have been discovered and developed by him and by many others since. It was not until the publication of his essay on "Shop Management" in 1903 that the results of his work and that of his associates, particularly H. L. Gantt and C. G. Barth, were presented to the public in a comprehensive form; and it is scarcely more than three or four years since these principles developed into a science. Emerson on "Efficiency" and "Going's

"Santa Fe Management" were published in 1909; Gantt's "Work, Wages and Profits" in 1910.

GANTT (Record, p. 3452).

"Mr. BRANDEIS. And when would you say the different principles which were involved in the works management had sufficiently developed to be entitled to be, as it were, brought together into a body which might be termed science?"

Mr. GANTT. That is very recent; not more than three or four years at the most."

(Compare TOWNE: Record, p. 3287.)

1. *Scientific Management is not merely Competent and Progressive Management*

The demand for scientific management and the high degree of efficiency and economy which go with it is not to be interpreted as a general charge of incompetency on the part of the present managing officials of the railroads or of their subordinates. Nor is it merely a demand for what is commonly known as progressive management. Scientific management differs radically from the most competent and progressive management under the old system. It differs also from systematized management. The difference is one in kind; and not merely in the degree of competence, or in the existence of progressive as opposed to conservative methods. Scientific management differs from that now generally practised by railroads, much as production by machinery differs from production by hand; and the revolution in railroading and other industries, which must result from the introduction of scientific management, is comparable only to that involved in the transition from hand to machine production.

(a) GANTT (Record, pp. 3454-3456).

"Mr. BRANDEIS. I wanted, just before going into specific matters, to ask whether you will distinguish between what is understood as

unsystematized business, and a systematized business, and scientific management; those three different classes.

Mr. GANTT. I think I have had some experience with all three kinds. The unsystematized business is where the order is issued from the office to the shop, and the office feels that their entire responsibility ends when they have issued the order to the shop. They feel no responsibility whatever until the date on which they wish that goods to be shipped passes, and then they feel that it is their duty to go out and raise row with the shipping clerk, first, and then with the one the next higher up, and then with the one the next higher up, and so on until they get as far back as possible. That is the unsystematized business.

The systematized business or manufacture is where they have a regular routine by which these orders shall proceed, from the office to the different departments, through to the shipping department, and in many cases they have a proper sequence worked out, so that the method of filling the order is not entirely left to the subordinates. That is the first step from the unsystematized to the systematized business; that is a step in the right direction, as everybody will admit.

The scientific management comes when each of those steps has been thoroughly investigated, each of the steps through which the work shall proceed, from the point at which it originates, to the point that it comes out of the works, when each of the steps has been investigated by the best expert available, be it a mechanic or whatever other person he may be. When that has been done, when each of those steps through which the work has progressed has been studied in detail, and a specific, definite route has been laid out, reduced to writing, and the returns come to the office to show how this work has progressed each day, from the time it is issued from the office; and when any failure to live up to these instructions is immediately reported back to the office, and a proper person who knows how it should be done goes out and helps the work along — does not wait until it is three or four or five days late and then go out and make a row — but as soon as it is one day late, he goes out and tries to remove the obstacle so that it can proceed, and perhaps catch up with the other work that has gone before it — that is scientific management. That is the difference between scientific management and the systematized management.

In the systematized management, the responsibility has not been

fully developed, as I take it, to see that each person is proceeding with the proper means whereby he is to get this work through."

(b) EMERSON (Record, pp. 3530-3531).

"Mr. BRANDEIS. What is the distinction between what you call scientific management and system or systematizing of business?"

Mr. EMERSON. Recently in writing a letter to a correspondent I told him that if he got his breakfast every morning at exactly the same hour and served in exactly the same manner, with the same knives and forks and spoons, in the same place, that might be system; but that if I took him out into the woods and made him tramp twenty miles, with forty pounds on his back, and pitch his own tent at night and cook his own meals, if I succeeded in restoring his shattered constitution that would be efficiency engineering. (Laughter.)"

2. *What Scientific Management Involves*

The action of the efficiency engineer working under scientific management has been aptly compared to a machine. He considers a business as an intricate machine. He analyzes each process into its ultimate units, and compares each of the smallest steps of the process with an ideal of perfect conditions. He then makes all due allowance for rational and practical conditions and establishes an attainable commercial standard at every step. Then he seeks to obtain continuously this standard, involving both qualities and quantities, — the interlocking or assembling of all these prime elements in each process into a well-built smooth-running machine; and when there are, as usual, several processes in each department and several departments in the business, all the departments as well as all the processes must be co-ordinated, so that the machinery of the whole business works with equal smoothness.

Engineering, whether applied to the production of transportation or of cotton cloth, or shoes, or machines,

means the planning in advance of production so as to secure certain results. The distinction between the mechanic and the engineer is that the mechanic cuts and tries and works by formula based on empiricism; the engineer calculates and plans with absolute certainty of the accomplishment of the final result in accordance with his plans which are based ultimately on fundamental truths and natural science.

In scientific management, therefore, results are predetermined. Before the work is commenced, it is determined not only as to what shall be done, but how it shall be done, when it shall be done and what it shall cost.

EMERSON (Efficiency, pp. 102-103, 104-105).

"There are two radically different methods of ascertaining costs: the first method, to ascertain them after the work is completed; the second method, to ascertain them before the work is undertaken. The first method is the old one, still used in most manufacturing and maintenance undertakings; the second method is the new one, beginning to be used in some very large plants, where its feasibility and practical value have already been demonstrated.

The objections to the old method are not only that it delays information until little value is left in it, but that it is wholly and absolutely incorrect, mixing up with costs incidents that do not have the remotest direct connection with them, so that analysis of cost statements as, for instance, repair costs per locomotive mile, does not lead to elimination of wastes. The advantages of the second method are not only that costs must be ascertained before the work is begun, but that the costs as finally tabulated are the real costs divided as to each unit, whether a single element or aggregated out of a million separate elements (1) into standard expense and (2) into avoidable loss. An analysis of costs so stated facilitates an almost inexorable elimination of inefficient conditions of all kinds, standard expenses being constantly standardized at new levels—wastes, the excess above standard cost, being constantly removed....

Predetermination of results is the main characteristic of the modern method. The acceptance of the hap-hazard is the main characteristic of the old method, still in full and orthodox standing

in cost accounting. Predetermination of results is based on scientific certainties modified by experience. It ought not to be necessary to prove that retrospect costs based on servile record of the haphazard cannot be of value, but actual illustrations from actual practice of their unreliability may hasten the conversion of those who are still skeptical.

Two closely similar types of locomotives were operating on a great railroad, one type in the East, the other in the West, both doing virtually the same work. The vice-president of the road desired to order a large number of new locomotives of the general type in question. He called for the records of the two classes and found that the locomotives operating in the West cost \$0.14 per mile for maintenance, but that the locomotives in the East cost \$0.10 per mile for maintenance. With these records before him he felt inclined to order the type costing for repairs \$0.10 per mile. The facts were, however, that the Western round-houses and repair shops were operating at 50 per cent efficiency, and the Eastern shops and round-houses at 80 per cent efficiency, so that the real respective costs of the locomotives were for the Western \$0.07 per mile and for the Eastern \$0.08 per mile. In this case so-called actual costs would have been expensively misleading. . . .

There was a railroad shop in which charges were distributed with such painful care that the shop sweepers subdivided their time to the various locomotives around which they loitered. But locomotives, as well as men, can loiter, and one of the locomotives stood in this shop three months waiting for a steel deck plate. Being familiar with its number, the workers charged all the time they could not readily account for to this locomotive, so that at the end of three months the total amounted to more than \$5,000. The fictitious accuracy as to the sweepers' time made more glaring the gross falsity of the locomotive charge. In principle there is no difference between charging an hour of wholly wasted time to a locomotive and charging it with two hours of time when one hour should have accomplished the work. The moment specific wastes of any kind are charged to a definite order instead of being charged to some inefficiency account, real costs are vitiated."

3. *Scientific Management Demands the Separation of Planning from Performing*

Planning in advance is of the essence of scientific management. The business engineer makes his plans and specifications covering the process of production before it is entered upon,—extending his directions like the mechanical engineer into minute details in order to secure the perfect product. Those engaged in actually performing the work would rarely be competent to do such planning; but even if competent, they could not undertake that function while engaged in performance without seriously impairing the progress of the work.

GILBRETH (Record, pp. 3405-3407).

"Separate the planning from the performing. Put that in writing in the form of an instruction card, so that you have it, not in accordance with the description in a cook book, but still more than that, so that each element of the operation which has been determined and standardized is written down in detail that will make a man sick that does not understand the purpose of it." He says: "That is the way these scientists have found out that this can be done the best." That instruction card can be depended upon to carry the word of the master or the manager without a line of translation in the way of the human element. I did not believe any of this, and when Mr. Taylor said to me, "Mr. Gilbreth, it is a shame that a man as strenuous as you are cannot be converted," I said, "When you tell me you can get my men to do three times as much work, you do not know what you are talking about. When my men go home at night, their first inclination is to sit down and rest. I have the best management there is anywhere on getting work out of men." That is the way every man talks to Taylor, and nearly all of his time is taken up trying to convert people that know an awful lot about military management, and do not know anything about functional foremen management.

By degrees I took some of his advice and tried it. I have absolutely revolutionized the trade of bricklaying. Mr. Towne said, "The man that can see the end in the advance of scientific management shows signs of decay." That does not begin to tell the story.

I have thought by revolutionizing bricklaying I had reached the limit of it. I cannot prophesy the end. There is no end. As every other science progressed, this science of the handling of workmen is progressing."

The planning department becomes highly developed.

HATHAWAY (Record, p. 3035).

In the Tabor Manufacturing Co. there were only seventy-five persons working in the machine shop, and twenty in the planning department.

The work of the planning department in the Brighton Mills is thus described:

SCHEEL (Record, pp. 3358-3362).

"Mr. BRANDEIS. You said, Mr. Scheel, you were the head of the planning department. I wish you would describe or state what that planning department consists of, who the members are, and their various functions.

Mr. SCHEEL. The planning department consists of those of the staff of the factory. It consists of the routing clerk, a cost clerk —

Mr. BRANDEIS (*interrupting*). You are the head?

Mr. SCHEEL. Yes.

Mr. BRANDEIS. You are called the head?

Mr. SCHEEL. Yes.

Mr. BRANDEIS. What is the next person?

Mr. SCHEEL. The man sitting next to me is the cost clerk or the cost accountant clerk. He is assisted by a cost clerk, who works up the preliminary figures for him.

Mr. BRANDEIS. What does the cost clerk or the cost accountant do?

Mr. SCHEEL. The cost accountant draws conclusions from time cards, store cards, memorandum of the cotton used and the distribution of expense to the different kinds of fabric and accounts generally.

Mr. BRANDEIS. He is currently keeping daily the cost of the article produced, is he?

Mr. SCHEEL. Yes, so that some result may be attained. The fundamental figures are worked up daily. The results are worked up monthly or every six months.

Mr. BRANDEIS. Next to the cost accountant is the cost clerk. What is the next person?

Mr. SCHEEL. The routing clerk, for the latter portion of the mill.

Mr. BRANDEIS. Is there more than one routing clerk?

Mr. SCHEEL. Yes, there are two routing clerks. There is one for the weaving room and the departments allied to it —

Mr. BRANDEIS (*interrupting*). The finishing?

Mr. SCHEEL. The finishing and the warping and winding, where the warps are prepared and where the filling is prepared. The other routing clerk directs the manufacture as to kind in the card room and spinning room and twisters.

Mr. BRANDEIS. What does the routing clerk do?

Mr. SCHEEL. He keeps a schedule showing what work is in process and what work is planned for.

Mr. BRANDEIS. That is, he makes up really the time table, does he, of all the work as it goes through these eighteen different departments?

Mr. SCHEEL. Yes.

Mr. BRANDEIS. And there are stations at which they are due right through these departments?

Mr. SCHEEL. Yes.

Mr. BRANDEIS. And he is keeping all the time records as to just what there is at each station as it comes along?

Mr. SCHEEL. Yes.

Mr. BRANDEIS. Whether it is on time or overdue?

Mr. SCHEEL. Yes, or ready in preparation.

Mr. BRANDEIS. What is the next official?

Mr. SCHEEL. There is a balance-of-stores clerk in the office.

Mr. BRANDEIS. What does he do?

Mr. SCHEEL. All stores are issued on cards, cards showing the taking out of stores. All receipts and all orders pass through his desk. He keeps the tonnage balance of materials in stores.

Mr. BRANDEIS. He is the one who keeps account of just what there is at all times, so he may determine what there should be?

Mr. SCHEEL. Yes.

Mr. BRANDEIS. The next one is what?

Mr. SCHEEL. The time keepers. There are four of them. They work up the time cards. Their work is finished when the entry is made on the pay roll, and the entries for the day on the pay roll checked.

Mr. BRANDEIS. What next?

Mr. SCHEEL. There are the investigators.

Mr. BRANDEIS. How many of them are there?

Mr. SCHEEL. There are six.

Mr. BRANDEIS. Six investigators, and what are their duties?

Mr. SCHEEL. They are engaged in investigating problems in various parts of the mill, all the time studying and working in the training of the workmen to bring them up to the standard. That about covers it, I think.

Mr. BRANDEIS. The gang boss is doing the training of the workmen, is he not?

Mr. SCHEEL. Not initially, necessarily, but the gang boss does that currently. When a thing is once established, the outside people keep going, but the investigator is a superior brain that gets it started and makes the preliminary studies and investigation."

4. *Scientific Management Changes the Relations of the Management to Labor*

Under scientific management, the management of the business assumes towards the workmen a wholly new function. Instead of the prevailing "putting it up" to the employee to do his work with such stimulus as may be given through force or inducement, the management, under the new science, assumes the responsibility of enabling the employee to work under the best possible conditions of perfect team play. It undertakes to instruct him definitely what to do and the best method of doing the particular work. It undertakes to provide him with the best tools, and with machines in the best condition. It undertakes to furnish him with assistance to perform those parts of the operation requiring less skill than his own. It keeps him constantly supplied with appropriate material. Acting in full co-operation with the workmen, the management thus removes all obstacles to the work-

men's full performance and supplies all aids necessary to secure full performance. The management thus assumes the burdens of management, and relieves labor of responsibilities not its own. It substitutes functional or staff organization for the military system.

EMERSON (Record, pp. 3588-3592).

"Mr. BRANDEIS. Just a word. Something was said about the military organization being objectionable, and the need of a staff organization essential to scientific management. If you can, in a word, state what you mean, or what is meant by that.

Mr. EMERSON. I would like to relate a little experience that will illustrate what I mean. In the old type of shop the vice-president of a railroad appoints the superintendent of motive power; the superintendent of motive power may select a shop superintendent; he may select his foreman; the foreman may select the man, and the doing of the job is delegated to the man.

A casting that ought to be machined in three hours will come in, and it is a very hard casting, and it takes twenty hours to machine it. The man is entirely contented. It is easier for him. He does not have to set up other castings, and he stays there and watches his machine take off these fine, hair cuts, and the twenty hours are taken up in machining that casting.

That is the old method.

Under the new method, we reversed that, in theory, as far as we could. Our theory was that it was the machine that did the work; that the man was there for the sake of the machine; that the foreman was there for the sake of the man; that the superintendent was there for the sake of the foreman; that the president was there for the sake of the superintendent; and in that way that the machine could call on the vice-president in case it got into any difficulty. That was the type of organization.

It requires nothing revolutionary to bring that about, except an entire change of view.

In this particular shop they had scheduled the work at three hours. The man tried his casting, and it took him twenty-three hours to machine it. He was losing out on his efficiency; he was naturally losing his efficiency reward, and he set up a yell to the foreman, "Look at this outrageous thing here, giving me three hours

on that thing. And it takes twenty-three hours to do it." The foreman was losing his efficiency on the man. He came around, in a hurry, to see what could be done to help out that casting, and to see whether the machine was at fault, and found that he could not do anything, so he hustled up to the superintendent, and said:

"Bill is very dissatisfied. It has taken him twenty-three hours to get out that work, that he would ordinarily do in three hours, on an ordinary casting, and I am dissatisfied, and we do not think it is a fair deal. It is not a right thing. What are you going to do about it?"

The superintendent went up and investigated, and said: "I will anneal those castings" — there were thirty-five of them. "I will put them in the big flange furnace, and anneal them, and soften them."

So he did put them in the big furnace, and tried to anneal them, and soften them, but there was manganese in the steel, and it did not soften. So that it was just as hard as ever.

He had exhausted his resources and came up to me and told me the trouble. He said: "What would you recommend doing?" He said: "I have done everything that I could." I said: "The proper thing to do is to have a special time study made for those thirty-five castings. They are special castings, much harder than normal. You have an entire change of conditions. Go in and make a new study, and make it date back to the first casting that the man had." So a new study was made, under the superintendent, by this time-study man, and the time was settled for these particular castings of twenty hours. The man, after that, attained his twenty hours, and he was contented. The foreman was contented.

I said to the superintendent: "You don't get out of it so easily. You are going to be charged up with the seventeen hours' loss on each one of those castings. That is pure waste and should not have occurred." He said: "What could I do about it?" I said: "You should never have let hard castings like that come into the shop." What are you here for, if you don't look at your material as it comes in?" He said: "What can I do about it?" I said: "Go and kill the purchasing agent." He said: "I will do it. I will write him a letter." So he wrote a letter to the purchasing agent, and I wrote a letter to the vice-president, calling his attention to the matter, and it was taken up with the steel foundry company that supplied the castings, and a complaint was made that they were furnishing castings with manganese in them, that were too hard, and that that condition

would have to be rectified; that the road would not receive castings of that kind, or it would charge the extra amount of work up to the foundry that furnished them.

That system resulted in making the vice-president remedy a difficulty that otherwise might have lasted indefinitely and greatly added to the expense of the operation.

Mr. BRANDEIS. And that would also have detracted from the reputation of the workman who did the job?"

5. *Scientific Management Demands Preparedness*

The results attained through scientific management depend upon universal preparedness. Under scientific management nothing is left to chance. All is carefully prepared in advance. Every operation is to be performed according to a predetermined schedule under definite instructions, and the execution under this plan is inspected and supervised at every point. Errors are prevented instead of being corrected. The terrible waste of delays and accidents is avoided. Calculation is substituted for guess; demonstration for opinion. The high efficiency of the limited passenger train is sought to be obtained in the ordinary operations of the business. The same preparedness is invoked for industry which secured to Prussia her victory over France and to Japan her victory over Russia.

HATHAWAY (Record, pp. 3039-3048).

"Mr. BRANDEIS. Will you now describe what you did with a view of preparing the way for the twenty men who were to functionalize this business?

Mr. HATHAWAY. We first installed a tool room and equipped it with tools. We arranged storerooms for the proper handling and storage of materials, and a planning department equipped with the necessary paraphernalia for doing the planning, planning the work. Planning the work consists of taking the drawings for any given job,

and from them mapping out in advance a definite course of procedure for prosecuting the work. Formerly the drawings were turned over to the foreman in the shop and his clerk ordered the castings and materials, and when they came in he planned it as well as he could or left it to the workman to plan out in case he had not time. As it is now, no piece of work is started in our shop until the method to be followed in prosecuting it has been completely mapped out. We determine in advance just how the machines shall be built, just what operations shall be performed on each of the parts that enter into that machine, and what machines they shall use in the sequence of the operations. We take each operation and plan the best method for doing it, and the tools that shall be used, and also as we do that we determine the time that that operation should take in its performance. The materials are all ordered in advance, before the work or the order goes into the shop at all, and the planning is going on during the time that the materials are being gotten into the shop. When the work is started in the shop, every possible preparation has been made, everything has been anticipated so far as possible to do it.

Mr. BRANDEIS. That is, when the work first enters the shop for the first piece of work to be done on it, you have prepared everything that is to follow in precisely the same way that the mechanical engineer has prepared everything when he is building a bridge or a steel structure or the like?

Mr. HATHAWAY. Yes.

Mr. BRANDEIS. And that applies to every single operation in the process of manufacture?

Mr. HATHAWAY. Yes.

Mr. BRANDEIS. As it goes through your plant?

Mr. HATHAWAY. Yes.

Mr. BRANDEIS. So that the planning is entirely comparable to the planning of the mechanical engineer who is constructing a bridge or a ship or any similar structure?

Mr. HATHAWAY. Precisely, yes.

Mr. BRANDEIS. In planning that work will you describe just the steps and the different functions of these twenty men that you speak of and what they are doing?

Mr. HATHAWAY. As soon as the drawings have been prepared —

Mr. BRANDEIS (*interrupting*). That preparation of drawings is precisely the same under the new system as it was under the old?

Mr. HATHAWAY. Precisely, excepting that our drawings now con-

vey the information necessary for the manufacture of goods a little more clearly than formerly.

Mr. BRANDEIS. It has certain additional instructions to the workmen?

Mr. HATHAWAY. Yes, and the planning appears more clearly.

Mr. BRANDEIS. But aside from that, there is no appreciable difference in the drafting room?

Mr. HATHAWAY. No.

Mr. BRANDEIS. What takes place when it goes into the manufacturing department?

Mr. HATHAWAY. The first step is to prepare a diagram or chart—that is, providing it is a machine composed of a number of parts—showing the relation of the various parts to each other, their relative importance, so far as they are to be pushed through the shop. For instance, a part that takes longer to get the casting for and has more operations, or operations of a more intricate nature on it, which we regard as being more important than a simple part that has one or two operations on it, is pushed through the shop, and this diagram indicates that and shows its relation to the other parts.

Mr. BRANDEIS. As I understand it, when the original planning is made, you are providing in advance or determining in advance those portions of the machine which it will require a longer time to get ready?

Mr. HATHAWAY. Yes.

Mr. BRANDEIS. So that when the period of manufacturing arrives, when they are needed, they will be ready to go forward on the train of manufacture?

Mr. HATHAWAY. Yes. This diagram shows the materials required for each of the various parts, the relation of the parts one to another, the operations to be performed on each of the parts, and which parts are to be manufactured especially for the order in question, and which can be drawn from stores or from stock. At that time what we call route sheets are made up on which the progress of what work we are sending through the shop is later kept track of. Orders on the storeroom for all material to come from stock are made up.

Mr. BRANDEIS. Take this route sheet which comes in at the beginning. Is there a predetermination approximately of the date when every bit of work on this order is to be performed?

Mr. HATHAWAY. Approximately there is. There is a date fixed for the completion of the entire lot of machines, and from that we

work backwards and fix dates when the various groups of sections of machines should be completed.

Mr. BRANDEIS. In the planning?

Mr. HATHAWAY. Yes.

Mr. BRANDEIS. In the planning there is fixed a time schedule?

Mr. HATHAWAY. Yes.

Mr. BRANDEIS. When the work, or each particular piece of the work, must be completed?

Mr. HATHAWAY. Yes.

Mr. BRANDEIS. In order that the train may arrive on time?

Mr. HATHAWAY. Yes. That, however, is not done by the man who plans the methods for doing the work. It is a different man, a different function.

Mr. BRANDEIS. It is a different man who does that?

Mr. HATHAWAY. Yes. That is the first step in the planning. After this diagram or these diagrams have been made up the next step is to see that we either have in stock all of the materials required, or that we have them ordered. The castings are ordered by a clerk whose duty it is to see that the castings get in on time, and who is in constant touch with the founderies, and it is his duty to see that the castings get in when wanted. The materials that are ordinarily carried in stock or in the stores are looked after by a clerk whose duty it is to see that the stock of standard articles, such as cap screws, bolts, bar steel and raw materials of that sort, is kept up.

The next step after that is to plan in detail the various operations, and in doing that the clerk whom we call the instruction card man gets the drawings for each piece and studies that particular operation and writes up an instruction card, stating the best method and the method which should be followed in performing that particular operation.

Mr. BRANDEIS. These men are among your functionalized twenty?

Mr. HATHAWAY. Yes, sir.

Mr. BRANDEIS. These men determine from the drawings the best way of performing every operation required in the construction of the machines?

Mr. HATHAWAY. Yes.

Mr. BRANDEIS. And they reduce it to writing?

Mr. HATHAWAY. Yes.

Mr. BRANDEIS. The instructions for performing that operation are reduced to writing by them?

Mr. HATHAWAY. Yes. They describe the method to be followed in performing that operation, in just the same way as they would do if they were going on the machine to do it themselves, and as they do that they at the same time make up a list of tools required for doing this operation in accordance with the method they have planned.

Mr. BRANDEIS. Are there any other instructions that are given?

Mr. HATHAWAY. Those are the principal instructions.

Mr. BRANDEIS. Is there any instruction as to the time which shall be required in performing the particular operation?

Mr. HATHAWAY. Yes, I neglected to say that in writing up this instruction card they put down each element that enters into it, such as putting in and taking out drills, putting on clamps for holding the work, changing the feeds and spools — every movement that must be performed is taken into consideration and put down in this instruction card in its proper sequence.

Mr. BRANDEIS. That instruction card will give a definite statement of the thing to be done?

Mr. HATHAWAY. Yes.

Mr. BRANDEIS. And the time allowed?

Mr. HATHAWAY. And the time allowed for doing each particular thing or performing that particular element.

Mr. BRANDEIS. And that instruction card is handed to the man who is to perform the work?

Mr. HATHAWAY. That instruction card is handed to the man who is to perform the work for his guidance and for the guidance of his gang boss or machine boss.

Mr. BRANDEIS. What is the next step?

Mr. HATHAWAY. The next step is putting the work in process or starting it out in the shop. I am a little ahead of myself there. In the meantime there have been operation orders written up; that is, an order for each operation, which is posted in the shop, and a bulletin board for each machine. They are written up. The orders for movement of work from place to place are written up. In fact, everything is arranged in advance or prepared in advance. Then the work is ready to be started in the shop as soon as the materials have arrived.

Mr. BRANDEIS. That is, everything that is to be done in the building of this machine is provided by specifications in advance?

Mr. HATHAWAY. Has been planned and prepared for.

Mr. BRANDEIS. So that the different pieces of work are assembled from time to time just as if you had completed the machine?

Mr. HATHAWAY. Yes.

Mr. BRANDEIS. Now go forward.

Mr. HATHAWAY. When the work is started in the shop, as soon as the materials arrive in the shop — we will assume we have some castings coming in ordered shipped for these machines or for a given machine. When they arrive, a notice is sent to the planning department and the clerk whom we call the recording clerk gets that notice. He immediately takes from the orders which have been written in advance and which have been placed in a receptacle, one of those orders and hands it to the move man, a man who does nothing but move the material. He does nothing except on written orders."

6. *Scientific Management Demands Analytical Study*

The results attained through scientific management depend further on a careful study of each operation with a view to determining in the first place what time should normally be taken in performing the operation, and secondly, whether it can be performed in a better manner than has hitherto been practised. No assumption is made that the time hitherto employed was necessarily the proper time, nor that the way in which it has been performed is the best way. Scientific observation and scientific methods are substituted for the rule of thumb, for practices hallowed by age and tradition; and waste, whether of time or of effort or of material, is eliminated. The whole realm of science is brought to the aid of the humblest workman. Instead of letting him trudge alone in darkness and afoot through a sandy road, he moves as on a bicycle by daylight over asphalt pavement.

(a) GANTT (Work, Wages and Profits, pp. 30-31).

"We can never be certain that we have devised the best and most efficient method of doing any piece of work until we have sub-

jected our methods to the criticism of a complete scientific investigation. Many people who have been accustomed to seeing an operation performed in a certain way, or to performing it in that way for a number of years, imagine they know all about it, and resent the intimation that there may be some better way of doing it. Anybody, however, who carefully analyzes the sources of his methods will find that the mass of them are either inherited, so to speak, from his predecessor, or copied from his contemporaries. He will find that he knows but little of their real origin, and consequently has no ground on which to base an opinion of their efficiency."

(b) GANTT (Work, Wages and Profits, pp. 34-36).

"The first condition is an investigation of how to do the work and how long it should take. The fact that any operation, no matter how complicated, can be resolved into a series of simple operations, is the key to the solution of many problems. Study leads us to the conclusion that complicated operations are always composed of a number of simple operations, and that the number of elementary operations is often smaller than the number of complicated operations of which they form the parts. The natural method, then, of studying a complex operation is to study its component elementary operations. Such an investigation divides itself into three parts, as follows: An analysis of the operation into its elements; a study of these elements separately; a synthesis, or putting together the results of our study.

This is recognized at once as simply the ordinary scientific method of procedure when it is desired to make any kind of an investigation, and it is well known that until this method was adopted science made practically no progress. The ordinary man, whether mechanic or laborer, if left to himself seldom performs any operation in the manner most economical either of time or labor, and it has been conclusively proven that even on ordinary day work a decided advantage can be gained by giving men instructions as to how to perform the work they are set to do. It is perfectly well known that nearly every operation can be, and the actual work is, performed in a number of different ways, and it is self-evident that all of these ways are not equally efficient. As a rule, some of the methods employed are so obviously inefficient that they may be discarded at once, but it is often a problem of considerable difficulty to find out the very best method.

To analyze every job and mark out instructions as to how to

perform each of the elementary operations requires a great deal of knowledge, much of which is very difficult to acquire, but the results obtained by this method are so great that the expenditure to acquire the knowledge is comparatively insignificant."

(c) GILBRETH (Record, p. 3416).

"I am frank and glad to say that this subject has become so exceedingly interesting to me that not only from the standpoint of interest, but from the standpoint of actual profits and benefits to my business, I am spending one day in every two weeks in some shop where there is scientific management. I am learning my trades all over again. I find the way I have always done has been wrong, and I am of the opinion that any new problem that comes up that has not been attacked by the laws of scientific management, is wrong, is bungled, and is very badly bungled."

(d) SCHEEL (Record, pp. 3334-3336).

"Mr. SCHEEL. One of these new looms, in fact four of them, had been studied by a man especially deputed to do that work; that is, a time study had been made.

Mr. BRANDEIS. What were the qualifications of that man who made the time study?

Mr. SCHEEL. He was the best man available; the best man as to experience; he was a college graduate, and also a graduate of Stevens Institute, who had been with the Brighton Mills in their mechanical department up to that time, for two years, I think.

Mr. BRANDEIS. When you say he studied the operation of that machine, describe exactly what he did, what studying means.

Mr. SCHEEL. In his case, I think studying meant, as the machine was being operated by a very good man, seeing what the difficulties were that prevented that man doing better work than he was doing.

Mr. BRANDEIS. You say, what the difficulties were in determining how that man could do better than he was doing?

Mr. SCHEEL. Yes.

Mr. BRANDEIS. How long did it take for this expert to study that simple operation?

Mr. SCHEEL. I think he spent a month, taking his notes, getting his readings, getting together his ideas regarding what the difficulties were, and thinking how he could remove them.

Mr. BRANDEIS. That is, he spent one month in the study of that particular operation?

Mr. SCHEEL. Yes.

Mr. BRANDEIS. And what was it that he did, and why did it take him a month to study that operation? Was he studying any improvement in the operation itself?

Mr. SCHEEL. No.

Mr. BRANDEIS. What was he trying to do, during that month that he spent his time on that study?

Mr. SCHEEL. He was trying, in the first place, to remove difficulties.

Mr. BRANDEIS. That is, to eliminate obstacles to progress in the work?

Mr. SCHEEL. Yes; and also to determine what physical motions the man went through, what the reasonable times were for each part of each of those motions, and what interferences there were in the way of the machine time itself. That is, what was preventable, plainly, and what was not preventable."

7. *Scientific Management Demands Records of Industrial Performance*

Scientific management recognizes also that due appreciation of the actual results of effort must be based upon actual knowledge; and such knowledge is an essential condition to the best performance. The current record of the accomplishment of each individual, of each machine, and of all material is an indispensable factor in scientific management. Without such a record the tyranny of the foreman, and all the discord which attends it, is inevitable. Without such a record justice to employer and employee is impossible. Without such a record waste cannot be eliminated. Without such a record no firm basis exists for progress in the individual or in the establishment.

Possessing such individual records, each performance is then compared with the standard determined through analytical study.

(a) GANTT (Work, Wages and Profits, p. 64).

"Not long ago a large contractor in New York, who had been studying methods of handling his workmen efficiently, spent some time on one of his large excavating jobs. He provided a sufficient number of buckets so that each man was always shovelling into a bucket by himself, and kept track of the buckets filled by each man. At once the number of buckets that came out of the hole was doubled."

(b) SCHEEL (Record, p. 3329).

"Mr. BRANDEIS: And what result is there in respect to the method of stores keeping?

Mr. SCHEEL. It involves the use of a systematic way of ordering materials; the use of the requisition from the man that wants the article on the purchasing agent; the use of a certain form on the part of the purchasing agent when he orders that material; the notification of the man that makes out the requisition when the article is received, so that he may pass on its quality before payment is made; and a notification of the accountants that the item is ready to be paid.

Mr. BRANDEIS. Then there is in this system of stores keeping an exact assimilation of the treatment of materials to that which has been common in the case of the treatment of money, and the vouchers for all the money expended?

Mr. SCHEEL. I should say so, yes.

Mr. BRANDEIS. So that, in determining at any time the materials on hand, instead of taking an inventory, or making a personal inspection, there is merely an inspection of the record to determine what is there?"

(c) SCHEEL (Record, p. 3330).

"Mr. SCHEEL. The method of time keeping makes provision for exact knowledge, on separate time cards, of operations — several cards for several operations by the same person, if they take place in one part of the day.

Mr. BRANDEIS. And each card, then, each day, is a record of what the man has done, and what the cost of it is, in wages?

Mr. SCHEEL. Yes.

Mr. BRANDEIS. So that, combining the material, the stores keeping and the time record, there is in the business, at hand, a daily balance showing the exact condition of the business, the exact expense up to that time of the operations which have been performed?

Mr. SCHEEL. Yes.

(d) GILBRETH (Record, pp. 3408-3409).

"Mr. GILBRETH. The first thing to be done, I should say, although there are a great many routes leading to this same place, is to separate the work of each man so that his output can be recorded separately, so that the square deal may be given to that man who is really doing the business. You make an incentive then for each man to do his best, and if he is rewarded in accordance with his effort, that is but one of the many schemes whereby this system is founded on fair play to the workman. Record the output of each man separately. Of course the man that hears this for the first time will say, "I know a case where you cannot record each man separately because there are four men pulling on a rope." That is no reason why you should not record the rest of them separately. I know of no shop where the scientific management has gone down and reached the last man. It is a case of percentage. If you can get 90 per cent of your men on this system instead of 80 per cent, it is a great deal better than the 80 per cent basis. That is the first step. Place your men so that their output can be measured separately and measure it separately so as to give the square deal to each man. That is the first step."

(e) GILBRETH (Record, pp. 3410-3412).

"Mr. GILBRETH. First of all, we separated the men so that their output showed up separately.

Commissioner PROUTY. Just how did you do that — by giving each man a certain number of brick, or how?

Mr. GILBRETH. That question you have asked, Commissioner Prouty, is a very leading question. It took us a long time to answer that on the work. We could not measure the output of each man separately for a long time. But in the process of scientific management that fact was prophesied, that we would be able to do it as surely as the position of one of the outer planets was prophesied by mathematics. We furnished our men with eighteen bricks in what we called a packet for the want of a better name. That packet consisted of a tray with four slats, two this way and two this way, for handles. I got the idea for that from Mr. Taylor and Mr. Gantt in the matter of handling pig iron at the Bethlehem Steel Company. They found after long experiments that ninety-two pounds was the best unit for handling pig iron. If that is true of pig iron and the

laborer makes no use of the material he carries, it must be true also of brick. So we arranged to have the packet that would best handle ninety-two pounds of brick. We counted the empty packet. We could do it no other way, and I assure you that we were weeks learning that simple fact. We had to knock off all business and put a man specially trained in science to discover how to measure the number of bricks of each man. Every workman, every brick man and foreman on the job, gave it up as being impossible, and that illustrates particularly well the difficulties encountered in this thing, and if you do not know more about your work than the best mechanic you can get it is not scientific management. This eliminates the old practice of safely leaving the conducting of work to a good foreman or a good superintendent. The new management consists of taking the best superintendent you can get, at any price, together with other scientists, and sitting down together and getting the best way, and putting it in writing, then measuring the output of each man and paying him a wage unheard of before. You cannot drive that man away from your job with a club when he once begins to get his bonus."

8. *Scientific Management Demands Standardized Methods and Equipment*

Scientific management seeks to ascertain and apply in every process the best attainable methods, practices, tools, and machines. It necessarily follows that all must be standardized. There is but one best way; and it is essential for the standardization of tools and machines that they be all in perfect condition. Any variation from the best, be it in kind or condition, is certain to interfere with the regularity of production, in quantity and quality and also to render untrustworthy such tests of relative efficiency as have been established.

(a) GILBRETH (Record, p. 3409).

"The second step would be to establish standards, standard tools. Go into Mr. Dodge's shop and you will find a man cannot use any

tool he wants. He has to use the standard tool, for they know what is better for him than he knows himself. The secret of this whole thing is that they have brought together the best men from the ranks, from the colleges, from the board of managerial experts, and they have all gathered together and put all this thing in writing, and that is the standard, and each man must use that standard. He must do it in no other way. He must use that standard. They provide a very good way for these better improvements to come in all the time and supersede the others."

(b) EMERSON (Efficiency, p. 79).

"The standard study has increased the average life of belting more than six-fold; has reduced belt failures to one-sixth of what they were, and has decreased the known cost to less than one-seventh."

Scientific management of course recognizes the possibility and desirability of such changes in methods, practices, tools, and machines as will tend to advance the art; but no change should be adopted except as the result of careful consideration by those most competent to deal with the subject.

9. *How Scientific Management has Increased the Efficiency of the Individual*

Wherever the principles of scientific management have been applied, greatly increased efficiency of men has been attained. The following are a few examples:

(a) When applied to the simple operation of loading by hand a railroad car with pig iron, the performance of the individual worker increased from 12½ to 47 tons a day.

(b) When applied to shovelling coal, it doubled or trebled the performance of the shoveller.

(c) When applied to machine shop work, it developed in certain operations, increases in production, ranging from 400 to 1800 per cent.

(d) When applied to bricklaying the day's accomplishment rose from 1000 to 2700 bricks.

(Gilbreth: Record, p. 3410.)

(e) When applied in the manufacture of machinery, 75 men in the machine shop with 20 in the planning department do two or three times as much work as 105 men in the machine shop did under the old methods.

(Hathaway: Record, p. 3059.)

(f) When applied in the manufacture of cotton goods, it increased the output a hundred per cent.

(Scheel: Record, p. 3377.)

10. *How Scientific Management Increases the Efficiency of Plant and Equipment*

Under scientific management the same analytical study is made of the possible accomplishment of each part of the plant and of each individual machine, as it is of the individual worker. Analytical study is made to determine what performance is possible under the best conditions and to eliminate every obstacle to full performance so as to secure the full utilization of every part of the plant and equipment. In most cases the increased productivity of the individual workman carries with it increased production of plant and machinery. Every problem incident to plant and machinery receives close study,—for instance, the arrangement of plant and machinery so as to reduce all unnecessary movements of men and material or machinery; equalization of equipment as well as standardization of equipment. A common incident of the introduction of scientific management is the discovery that a plant supposed to have been inadequate proves to be over-equipped.

(a) Scientific management applied in the manufacture of machinery, increased the capacity of the plant over 150 per cent.

(Hathaway: Record, p. 3058.)

(b) EMERSON (Efficiency, pp. 59-62).

"A head of staff to plan, direct and advise as to everything appertaining to the adjustment of structures, machines, tools, and other equipment to the work in hand. There is very little difference between good handling of equipment and good handling of men. The rules that apply to the one case will generally apply to the other. Much has been learned about the proper care of men from methods evolved for the care of equipment, and much has to be learned about the care of equipment from methods evolved for the guidance of men. It is not to be forgotten that in the human organism the whole is incapacitated by a seemingly slight injury to a single part. No man will work efficiently with a cinder in his eye, or a splinter under his nail. Neither will a plant work efficiently if little things go wrong. Single items of equipment are often of very great perfection, whether a Corliss engine or a twist drill, but from twist drill to general design and equipment of plant everything is usually wholly out of relation and balance. Recently, in consequence of staff organization, it was found necessary to relocate over three-quarters of all the machines in two large and fairly modern plants. Each machine had been doing good work by itself, and no one looked further; but the moment its relation to other machines or to the progress of the work was investigated, the conditions at once appeared impossible and unbearable. This relocation of machines, together with other staff reforms, has resulted in an increase of output of 40 per cent without additional men for equipment. The high officials of every railroad point out the glaring defects of early location or equipment — the fact, for instance, that among 1600 locomotives owned by one road there were 250 different types, instead of 6. The earlier builders had no staff advice.

This staff line in charge of the use of equipment also extends down until it is within reach of the worker. An example will show both the nature and the effects of staff organization. A staff was organized on a transcontinental railroad to advise generally as to the care and operation of shop machinery and tools. The duties of the staff, which extended from the vice-president's office downwards, were:

- a. To secure suitable machines and equipment.
- b. To give them the best possible care.
- c. To give the workers advice and directions as to how to use the equipment most efficiently.

The expense of maintaining shop machinery and tools on this railroad, for the year 1903-4, was \$487,171; the unit cost in relation to output was \$10.31. On a competing and largely parallel railroad, working under similar conditions, the cost in the same year was \$487,150, and the unit cost, \$9.55. As a result of staff activity and control on the first road, by the year 1906-7 total costs had fallen to \$315,844, and unit costs to \$4.89, but on the other road, where line organization was not supplemented by staff organization, the total costs rose to \$638,193, unit costs remaining virtually constant at \$9.81. This saving in expenses of \$322,000 was brought about by a staff costing less than \$10,000, and the \$10,000 is included in the \$315,844.

One subdivision of this maintenance problem was the care of belting. This had cost (for maintenance and renewals) at one of the main shops about \$12,000 a year, and it was so poorly installed and supervised that there was an average of twelve breakdowns every working day, each involving more or less disorganization of the plant in its parts or as a whole. With the authority of the vice-president and in conjunction with the general purchasing agent, the whole subject of belting was taken up. A few general rules were laid down:

- a. That there should be accurate and continuous records of installation, repairs, and breakdowns.
- b. That the installation and care should be delegated to one trained specialist with full authority and responsibility.
- c. That the quality of the installation and operation should be very high.

The worker in actual charge of belts, a promoted day laborer, was given standards, and took his directions from a special staff foreman, only one of whose duties was knowledge as to belts. The foreman had received his knowledge and ideas from the general chief of staff, who had made belts a special study, and this general chief of staff had been inspired and directed by a man who had made a nine years' special study of belts and who was the greatest authority in the world on the subject. The belt foreman had as much of this knowledge at his call as he could absorb, but he in turn was in immediate contact with each individual belt, with the machine it was on and with the worker using the machine. The chief of staff learned as much from the belt foreman as the belt foreman learned from the chief of staff. The belt foreman learned as much from the machinists

as they learned from him. The cost of maintaining belts fell from \$1,000 a month to \$300 a month, the number of breakdowns declined from twelve each working day to an average of two a day, not one of them serious, and even the few breakdowns were due almost wholly to originally defective installations, such as narrow pulleys, which it was impossible to remedy without unjustifiable expense."

11. *How Scientific Management Increases the Efficiency of Material*

Under scientific management the same study is made and care taken to secure full utilization of materials as of men and machines. Scientific methods are pursued to determine what materials are best fitted for the particular purpose and what their proper cost should be. Only such materials are supplied. The material is guarded with the same scrupulous care as the money with which it is bought. Ledger accounts are kept for each article; whatever is needed must be vouched and accounted for and the material account be balanced as accurately as the cashier balances his daily cash account. Thus what is on hand is always known by the accounts; and waste either in purchase or in use is avoided.

(a) EMERSON (Efficiency, pp. 62-63).

"A head of staff as to materials, their purchase, custody, issue, and handling. Subsidiary materials are only too often purchased on the basis of price per pound rather than on basis of cost per unit. This is inevitable, since no one is able to give the purchasing agent any standard as to cost per unit. After materials are purchased, they are frequently given such poor custody that they deteriorate or disappear before being used. They are still more often issued for extravagant and wasteful use. The economical handling of materials is a special art.

In a large steel plant, staff control of handling material reduced

the cost of handling per ton from \$0.072 to \$0.033, and increased the number of tons handled per man per day from 16 to 57. Here again was the same kind of staff organization, calling down from the top all the most valuable knowledge in the world as to this one subject, working up from the bottom from actual daily contact with changing conditions.

There is no logical difference between money spent on materials and money spent for labor. A brick wall is a combination of labor and of material. Every issue of material, every issue of labor, should be standardized in advance and checked; the same system of accounting and distribution should be used for both labor and material."

(b) EMERSON (Record, pp. 3546-3547).

"Commissioner PROUTY. What do you mean by 'inefficiency of material'?"

Mr. EMERSON. Engineers know very well, and have determined how much horsepower you ought to get or how much water you ought to be able to evaporate from a pound of coal. If you are using a great deal more coal than that there is an inefficiency. There is an ideal result which you ought to get which would be a horsepower from one-fifth of a pound of coal. The highest attainment they ever get is a horsepower from a pound. That is a very high ideal. If you find people are using either eight or nine or ten pounds of coal per horsepower, it measures a certain amount of inefficiency compared to the practically attainable. That is an illustration. The fuel is the largest single item of expense, so that a large amount of this saving might be from the fuel. That is the second way of determining this waste. The third was the comparative methods. All railroads are efficient in certain directions. They are tremendously efficient in certain directions. Each railroad has some particular spot in which it is more fortunate perhaps than other railroads. Taking the different railroads of the country and visiting them and investigating them and finding out that one had an efficient way as to maintenance of locomotives, another as to maintenance of cars, that a third had an efficient way as to maintenance of shop machinery and tools, and the fourth had an efficiency as to maintenance of track; and taking all these different bright spots that the railroads had evolved through the special genius of the men connected with or interested in those particular departments, you get a third standard —

a standard, for instance, let us say of six cents a mile as being an adequate amount on the average to maintain locomotives, or a standard of thirty-five dollars as an adequate standard to maintain cars."

12. *What Labor Gains from Scientific Management*

A. FINANCIAL GAINS

Under scientific management the employee is enabled to earn without greater strain upon his vitality from 25 to 60 per cent and at times even 100 per cent more than under the old system. The larger wages are made possible by larger production; but this gain in production is not attained by "speeding up." It comes largely from removing the obstacles to production which annoy and exhaust the workman, — obstacles for which he is not, or should not be made, responsible. The management sees to it that his machine is always in perfect order. The management sees to it that he is always supplied with the necessary materials. The management sees to it that the work comes to him at proper times, with proper instructions and in proper condition. The management sees to it that he is shown the best possible way of doing the job; that is, the way which takes least time, which takes least effort, and which produces the best result. Relieved of every unnecessary effort, of every unnecessary interruption and annoyance, the worker is enabled without greater strain to furnish much more in production. And under the exhilaration of achievement he develops his capacity.

1. *Increased Pay*

(a) In the Brighton Mills the earnings of wages were thus increased from 45 to 75 per cent above the prevailing day rate.

(See Scheel: Record, pp. 3341-3368.)

(b) In the Tabor Manufacturing Company the wages of the men were increased on an average from 25 to 30 per cent.

(See Hathaway: Record, p. 3027.)

(c) In the Link Belt Company the earnings of the men range from 25 to 35 over the generally prevailing wage.

(See Dodge: Record, p. 3137.)

(d) HATHAWAY (Record, pp. 3056-3058).

"MR. BRANDEIS. Taking a man at an individual machine, how much does he do under the new system as compared with what he did under the old system?

MR. HATHAWAY. That is rather difficult to answer, but in general —

MR. BRANDEIS (*interrupting*). I mean what particular work of producing results?

MR. HATHAWAY. In general, it ranges anywhere from three to five times the work formerly done. On some machines it is greater as to gain, and on some others there is gain but not so great.

MR. BRANDEIS. The average would run from three to five times?

MR. HATHAWAY. Yes.

MR. BRANDEIS. That much greater than what they used to do under the old scheme?

MR. HATHAWAY. Yes.

MR. BRANDEIS. Is that attributable in large part to his working harder, or is it attributable to other causes?

MR. HATHAWAY. He does not work any harder than he formerly did. He works more efficiently, however.

MR. BRANDEIS. And he works more efficiently why?

MR. HATHAWAY. Formerly, when we started a job, he had first to frequently hunt up the foreman to find out what he would do next. Then he might have to hunt up his materials and get them to the machine. After that he had to decide how the job was to be done and look up his own tools for it. He had to grind his own tools and all of the things that we now do in the planning department for him he had to do himself to a very large extent while his machine was standing idle. As it is now, the machine runs along on other work while we are making preparations for his job ahead. That is one reason.

Another reason is that our machines are in better shape, we furnish the men with better tools, better implements and tools, that are put in condition for us and kept in condition for him.

Mr. BRANDEIS. Then you show him how to do it?

Mr. HATHAWAY. Then we show him how to do it.

Mr. BRANDEIS. Taking that particular work that a man does of three to five times as much as he did under the old system, you have got to set against that the fact that you have these twenty different persons who are undertaking by way of planning or otherwise, instruction or otherwise, to enable him to do it?

Mr. HATHAWAY. Yes."

2. Promotion.

GANTT (Record, pp. 3462-3465).

"If I may add here, this instructing of these men rapidly leads to a number of them coming to the front. We get from our men who have been taught, men who have worked at routine work according to their own ways for years, and who have never thought of investigating anything better, — we get from these men, when we begin to instruct them, and they have the inspiration of the higher grade man who is helping them, and not driving them, the material for more responsible positions. We find that those men come forward with suggestions that will help the whole thing along, and they become instructors. We get our best instructors from the men who have been instructed by us. And invariably, in plants where I have been, where they have told me that they did not have any good men in their plants, after we began this system of management, good men began to crop up all around, and in a comparatively short time we had our positions filled with far better men than they ever thought they had there.

Giving the man a chance, giving him inspiration, makes a man out of him, instead of a machine. He has the same joy and pleasure in his work that the man in the higher position has in his. He has his individual record, as was shown to you on those charts, and he does not like to see a red mark against him. He wants it all black. It gives them an influential feeling among themselves. They feel some importance. I have known, in one case, where these people who had become bonus workers formed a little society among themselves, and it was quite exclusive; nobody who could not earn a bonus was allowed to join. (Laughter).

Mr. BRANDEIS. How is it in shops as to avenues of promotion? Do people have a chance to rise up? You spoke of one particular promotion.

Mr. GANTT. I might give one particular promotion, which I think is one of the most striking cases that I have had anything to do with. When I began to do some work with the Brighton mills, five or six years ago, I do not remember exactly how long it was, there was in their shipping department a man named Kelly who understood what I was talking about, and who, in a very short time, saw what we were trying to do, what we were driving at. He had been foreman of the shipping department for fifteen years, during which time superintendents of that mill had come and gone, one after the other, and during that time they had not had any single superintendent who was a really satisfactory man.

In a short time Mr. Kelly was promoted from the position which he held to another one, and then to another one, and within three years or about three years he was superintendent of the mill; and he is a most excellent superintendent. I want to say that but for this system of management it is probable that he would have been there another fifteen years without being promoted to the position of superintendent. I have no reason to believe there would have been any change.

We have had that same thing in another plant, a very large plant, the Sales Bleacheries, where they told us that they did not have any competent and capable man in the place. When we got this work going, we found competent and capable men developing all along the line. And now, I venture to say, they will never, as long as the present management or the people in authority there continue, have to go outside for another man to do anything. They have them all there. I do not mean that they will not have to bring in young men, but I mean that they will not have to bring in men from outside to fill important positions. The men are growing up to those positions, in every direction, within the plant."

B. SOCIAL GAINS

The social gains of the workingman from scientific management are greater even than the financial. He secures the development and rise in self-respect, the satisfaction with his work, which in almost every line of human activity accompanies great accomplishment by the individual. Eagerness and interest take the place of indifference, both

because the workman is called upon to do the highest work of which he is capable, and also because in doing this better work he secures appropriate and substantial recognition and reward. Under scientific management men are led, not driven. Instead of working unwillingly for their employer they work in co-operation with the management for themselves and their employer in what is a "square deal."

(a) GANTT (Work, Wages and Profits, pp. 171-172).

"The workman who has become master of something takes pride in his work and soon distinctly improves in personal appearance. The improvement is so universal and so marked as to be always distinctly recognizable, and is much more than can be accounted for by the increase in wages which enables him to dress better.

This improvement is even more marked in girls than in men, for the girls invariably acquire a better color and improve in health. In one case the girl bonus workers formed a society and adopted a badge which they all wore. Only those who could earn their bonus were eligible. This incident is a little thing of itself, but it shows the feeling that comes with the mastery of some subject. They know what they can do and are proud of it. This consciousness of efficiency, — this knowledge that they have succeeded and can do it again, puts the worker in a different class from those who go along day after day watching the clock, and doing just enough not to get discharged.

The task gives the worker a definite object to strive for, causes a certain amount of mental exhilaration, and invariably increases the keenness of the perceptions.

From our task workers we frequently get instructors and sometimes investigators. From our investigators and instructors we get an ample supply of superintendents and foremen. The foremen and superintendents trained under this system have proved far more successful than any it was possible to hire."

(b) GANTT (Work, Wages and Profits, p. 116).

"The general policy of the past has been to drive, but the era of force must give way to that of knowledge and that the policy of the future will be to teach that to the advantage of all concerned."

(c) SCHEEL (Record, pp. 3374-3376).

"Mr. BRANDEIS. Have you observed in connection with this any change in the attitude of the men or women in the employ of your company, or of their general demeanor in relation to their work and their attitude toward it?

Mr. SCHEEL. I think quite decidedly so, in several departments.

Mr. BRANDEIS. And in what respect have you observed such a change?

Mr. SCHEEL. In the spinning department we have all noticed that with the introduction of a scientific way of measuring work and of paying for it, there has been a change in the spirit of the help from one of a sort of hidden desire to do as little as possible, perhaps, and take advantage of every excuse and every reason for failure to do anything, to a search for real reasons why results are not possible. It has seemed to us that the individual worker has always been pretty high in efficiency as to himself. When there is a day pay, it seems to us that the operative showed a pretty good degree of efficiency, for he did as little as was convenient for him in order to keep on getting that rate. However, when we so do things that by making his efficiency coincide with the firm's measure of efficiency, he is willing to do whatever is necessary in order to get the added reward.

Mr. BRANDEIS. It has been said in regard to some of the work which, I believe, had reference to work in your mill, that it became fashionable to work instead of to shirk work.

Mr. SCHEEL. Yes.

Mr. BRANDEIS. Were there any instances of that, and are you able to show from any of these charts how there came a change in respect to the fashion of working or not working on particular days or times?

Mr. SCHEEL. I think that is shown in the filling winder sheet.

Commissioner LANE. What page is that?

Mr. SCHEEL. That is opposite page 168. At the beginning it took a number of days, as shown by the red spaces at the beginning of the line, for new operatives to come up to the bonus. Those that came on last, all of the last four, made a bonus on the first day.

Mr. BRANDEIS. That is, at first it took a long time before they could get into the spirit, perhaps, or whatever it was that enabled them to do it?

Mr. SCHEEL. Yes.

Mr. BRANDEIS. And later they caught right on to the moving train and made it quickly?

Mr. SCHEEL. Yes. You will notice at the beginning of the sheet that a good many of the red spaces are Mondays; that is, that the Mondays are shown to be days when efficiency suffers, and that toward the end of the sheet that is not true to the same extent.

Mr. BRANDEIS. How was it about work on Saturdays? Was there any marked change in that, or in any other room, in respect to the work on Saturdays?

Mr. SCHEEL. On the spoolers sheet, opposite page 172, Saturday being a short day and the day when the cleaning up was done, that was the day when the spoolers did not bother much to make the bonus?

Mr. BRANDEIS. Did that fashion change?

Mr. SCHEEL. Yes."

(d) GILBRETH (Record, pp. 3417-3418).

"One point I would like to bring out this morning in the interest of the consumers or the workmen or the employes or any one you want to think of, is the fact that this is not a slave-driving scheme. It is a scheme whereby, on the other hand, a man has the joy of achievement, the same joy in a modified form that a football player feels when he runs down the field and beats the others. These men are not driven. They do work harder than they do before. Scientific soldiering is entirely eliminated, and there is nothing better for the morals or physique or anything else of the workman than eliminating scientific soldiering — and it is a science, gentlemen, you have no idea of. (Laughter.)"

C. AIDING THE LESS COMPETENT

Scientific management recognizes the right of those less expert in the work to advance to greater efficiency, and the importance to the employer of training his workmen to be competent. It therefore provides through the most practical teachers for careful training of men to work in the best manner and to develop habits of industry instead of letting "the devil take the hindmost" and exposing the less competent to the probability of discharge. It supplies instruction, and offers to the teachers special incen-

tives if they succeed in bringing up the hindmost. The teacher is as prominent in scientific management as in the armies of Prussia and of Japan.

(a) A striking illustration of this proposition is furnished by the practices of the Brighton Mills. After the best conditions for weaving had been determined, the work of instructing the individual weavers was patiently entered upon; practically a month and a half was spent by a scientifically trained expert and the gang boss in training three weavers. Not until they had been trained was the instruction of others undertaken; and even after all have been trained, the gang boss never has under him more than twelve men. Not only the weavers, but the gang boss receives a bonus. His bonus is six cents a day for every man who gets a bonus; but he receives the additional incentive for bringing up the hindmost by an increase of his bonus to ten cents a man if all twelve receive a bonus.

Besides these teachers there are three inspectors in the weaving and finishing rooms, who in a sense are teachers; and in addition in this mill, which has only about 600 employees, there are six investigators who "are engaged in investigating problems in various departments of the mill, all the time studying and working in the training of workmen to bring them up to the standard."

(See Scheel: Record, pp. 3336-3367.)

(b) GANTT (Work, Wages and Profits, pp. 109-110).

"Under former conditions, the foreman hesitated to teach the workman for fear the latter might learn as much as he knew and possibly get his job. Under the new conditions, the man who knows is paid for teaching others as much as he knows, and the others are paid a bonus for learning and doing what they are taught. It is this feature of the task and bonus system that has enabled us not only to obtain, but to maintain permanently, such satisfactory results. The expert workman who becomes a good teacher soon makes his services valuable, for, by his assistance, we can often make the average efficiency of the shop even greater than his best efficiency was before we began to study the question of efficiency. He learns to remove obstacles which stood in his way when he was a simple workman, and often becomes an expert also not only at removing these obstacles, but at developing better methods to avoid them."

D. THE BONUS

The money reward for the individual workman's high accomplishment is ordinarily and probably most effectively distributed by means of a bonus system; but while the bonus system is rather a common incident of scientific management, it must not be supposed that the bonus system *is* scientific management. The bonus system is apt to do far more harm than good when it is applied otherwise than as a part of the system of scientific management. Apprehension by labor of the bonus system when introduced except as a part of scientific management, is well founded. On the other hand, the bonus system under scientific management has proved itself to be perhaps the most appropriate method of securing to labor its proper reward and perpetuating full co-operation between employer and employee.

When applied in connection with scientific management the bonus system has always these features, among others:

GANTT (Work, Wages and Profits, pp. 110-111).

"1. — A scientific investigation in detail of each piece of work, and the determination of the best method and the shortest time in which the work can be done.

2. — A teacher capable of teaching the best method and shortest time.

3. — Reward for both teacher and pupil when the latter is successful."

E. PIECE WORK

It must not be supposed that the introduction of the piece rate system *is* scientific management, or *even an approach* to it. On the contrary, the existence of the piece rate system often proves the greatest obstacle to the intro-

duction of scientific management. Under scientific management the increase of wage is coincident with reduction in cost, — but under the Erie piece rate system the increase in wages was attended by reduced performance.

(a) STUART (Record, p. 2815).

The piece rate system was introduced on the Erie after a great struggle at a cost of about five million dollars (Record, pp. 2738, 3764). Its introduction was later followed by increase in wages, with this result:

"Mr. WADHAMS. What has been your experience with respect to an increase of wages having any effect upon economic advantage to the railroad?

Mr. STUART. There is no increase.

Mr. WADHAMS. You get no more work than you did before?

Mr. STUART. Not as much.

Mr. WADHAMS. So that, from the point of view of the railroads, you consider the increase in wages as a total loss?

Mr. STUART. Yes; absolutely."

(b) EMERSON (Record, pp. 3531-3534).

"Mr. BRANDEIS. Would you state what the relation is, as you understand it, between the piece rate system and the system of bonus reward?

Mr. EMERSON. Both of them are forms of efficiency reward. We have always found, wherever we have been, that piece rates were one of the greatest obstacles to the introduction of scientific methods. Wages in my opinion depend on three matters. The compensation of the workman depends on three different elements. He is firstly entitled to his day rate, whether he works or not; that is, because he comes and puts himself at the disposal of his employer. The employer has a right to ask what the equivalent will be of the wages that he is paying the man. If that man gives more than the usual equivalent or more than the equivalent that may be even scientifically determined, that is the individual merit of the man and he should be rewarded accordingly. I therefore always try to keep these three matters entirely distinct.

The first one, that of the rate of wages, is absolutely open to individual or collective bargaining. The question of equivalent can

only be determined by scientific experts. Either the man who pays the wages or the man who receives the wages is competent to determine what the equivalent is. The third point, the extra compensation that should be paid to a man for his special, individualized effort, is again open to collective bargaining. The reason we find piece rates a great stumbling block in our way is that in the first place they disregard the first principle; they do not guarantee to the man a fixed rate. The second reason for finding them a stumbling block in our way is that an efficiency record should be based on standardized conditions, standardized operations, and standardized reports, and to the great number of different principles should be applied first, before you are in a position to put in an efficiency reward basis. If, in the absence of the application of these principles, you wish to establish piece rates, it is absolutely necessary to make that rate high enough to give the man a living wage. In order to get the piece rate in, that rate is made usually very easy and very high. After a man has worked for a while and has himself to some extent standardized the conditions and standardized the operations, and when the management has to some extent standardized conditions and operations, it is found he is getting an entirely unreasonable rate of compensation. He has not put forth additional effort, but these other elements have come in to make the task very easy. Then the management immediately has recourse to the principle of cutting the rate, which leads the workman to retaliate by standing pat. You have then that element of standing pat on the one side and of cutting the rate on the other side, that does not accord at all with scientific management.

The third trouble with the piece rate system is that it puts the responsibility up to the man instead of putting it up to the management. They have put in a rate and told him, "You go ahead; it is up to you; you turn out all you can. We wash our hands of the matter." The consequence is we do not have what I would call scientific management in the piece rate shops.

That is the reason I have always been opposed to it. I consider it the greatest stumbling block that I encounter, and we also always ask as a favor, as a first step toward improved scientific management, that the piece rate basis shall be abolished, and that the men shall be put back on day rates."

(c) GANTT (Record, pp. 3740-3744).

"Mr. GANTT. In the piece work system, pure and simple, we find, in most places where I have seen it in operation, that there is no special effort made to supply the men with the work when they want it. The man may have to wait for something. The foreman, for instance, does not feel that it is up to him; does not feel his responsibility to help that man; and if the man is delayed about something, he says: "Well, I will attend to you after a while."

Commissioner PROUTY. Yours is a system of team work, and his is a system of individual work?

Mr. GANTT. Absolutely. Ours is a system of team work; and the poorest man on the team is to be helped by the man who knows more than he does. That is the essential difference.

And when we obtain knowledge of the best way in which a thing can be done, that knowledge is recorded. Mr. Kent showed you those instruction cards. That much knowledge can never go back. We have taken that little step — it may not be the best that has been done in the country, but it is the best our expert could devise; and that is recorded, and everybody on our list is taught that. The Canadian Pacific Railroad is preparing to send those instructions over the lines into their shops, as soon as they can get a proper list of standard tools in those shops, and see how much good they can do. We try to bring everybody up to the standard, and gradually to raise the standard, and bring everybody with it. We do not raise the standard by a jump, but gradually, so that everybody can reasonably get up to it. We do not find that one man can do a job in half an hour, say, and then turn around and say that all of the other men must immediately do that job in half an hour, when the other man may have been taking two hours for it. We consider that that would be manifestly unfair, and absolutely wrong and unjust to the men. If that piece of work can be done in half an hour, it is possible for the expert to show the men, to teach them, how to do it. In the vast majority of cases, if the man is a normal man, he comes up to our expectations and becomes a better man as a result, — a very much better man. He has more self-respect, and more reliance on himself.

Mr. BRANDEIS. Taking this very matter of the piece rate, that Commissioner Prouty refers to, if a man, for instance, had been earning, ordinarily, \$2 a day, at a given number of rates, representing perhaps ten pieces of this work, then, if he makes eleven pieces, he gets \$2.20 and if he makes twelve, he gets \$2.40 and the like. I

understand your bonus system is a system by which the man has a limit, by making the effort, which means largely by following the instructions; he would get, not \$2.20, \$2.40, \$2.60, or \$2.80, but would make the goal every time, if he worked right. He would either get \$3 or \$2 or \$4 a day, or whatever the rate might be.

Mr. GANTT. That is not exactly it.

Mr. BRANDEIS. That is it in part, is it not?

Mr. GANTT. Partly. The difference is this. That we do not allow a man to work piece work — we do not take the green man, at the start, and ask him to work piece work, but we take the green man, and give him the day's wages, until we can teach him how to earn this higher rate, how to come up to this standard; and then, when he has reached this standard, we give him his additional 25 or 30 per cent, and then, whatever he does in addition to that he gets in proportion.

Mr. BRANDEIS. That is, he gets a piece rate, as it were, after he has reached the new standard; then he gets a piece rate?

Mr. GANTT. In other words, it is different work for the unskilled and for the skilled. When the man becomes skilled, becomes practically in the expert class, you might say, then we pay him piece work; but we teach him how, first.

Mr. BRANDEIS. Yes.

Mr. GANTT. And we help him.

Mr. BRANDEIS. And there is no limit to what the man can get?

Mr. GANTT. No.

Mr. BRANDEIS. When he gets into the bonus class, a man can go just as much higher as his ability will permit; and it is actually your experience that men do go very considerably higher?

Mr. GANTT. Yes. If we find men who are capable of going very considerably higher, we do not cut their wages, and thereby drive them out of the shop, but we say: "Here is a man that would make a good investigator for us. He is the man we are looking for," and he is the man we put on the study of these problems. We make him a teacher. If he is so much better than the rest, we make him a teacher. The result is that we get the benefit of those best men for our teachers and instructors, which improves the condition of our shop.

Mr. BRANDEIS. This is so, is it not, that the management having assumed the responsibility, itself by a proper management to bring the man up to the bonus class —

Mr. GANTT. Exactly so."

13. *What the Employer Gains from Scientific Management*

The employer gains not only reduced labor cost due to greater productivity of the workingman, but also those great incidental benefits which flow from improved service, as from greater celerity and greater punctuality in completing work. The employer gains much from the lessened need of plant and equipment which follows its fuller and uninterrupted use. He saves in interest and taxes, and in depreciation charges. He saves in reduced stock of materials, raw and in process. He saves in a lessened strain upon his credit.

(a) When applied to construction of buildings, the labor cost was reduced about one-half.

(Gilbreth: Record, p. 3424.)

(b) Even when applied in a business which, under the old method, had been most progressively managed for years, and thoroughly systematized, the introduction of scientific management produced the following remarkable results in different processes and operations, which are designated by letters.

	Saved in direct labor.	Saved in overhead charges. (Labor and general shop expenses.)
A	12 per cent	26 per cent
B	74	78
C	16	30
D	2	18
E	31	43
F	35	45
G	36	46
H	28	17
I	16	4
J	28	11
K	37	28
L	37	10 (increase)
M	34	24
N	63	81

(Towne, Record, pp. 3319-3320.)

(c) GANTT (Record, pp. 138-139).

"The fact that under this system everybody, high and low, is forced by his co-workers to do his duty (for some one else always suffers

when he fails) acts as a strong moral tonic to the community, and many whose ideas of truth and honesty are vague find habits of truth and honesty forced upon them. This is the case with those in high authority, as well as those in humble positions, and the man highest in authority finds that he also must conform to laws, if he wishes the proper co-operation of those under him."

(d) SCHEEL (Record, p. 3377).

"Mr. BRANDEIS. It appears, Mr. Scheel, that a very large amount of money must be spent in the aggregate by your company in paying these various men who, under different names of gang bosses and inspectors and investigators, are doing the instructing of the workmen, and others again who are keeping these extensive records of the daily performances. Has that money been expended profitably, so far as returns to the company are concerned?"

Mr. SCHEEL. Yes."

14. *What the Consumer Gains from Scientific Management*

Experience in trade has shown that except where there is a close unregulated monopoly, the public always secures some part of the benefit gained by reduced cost of production. The reduced selling price comes, ordinarily, not as a voluntary concession, but because the demand of the consumer for lower prices proves irresistible in competitive or publicly regulated businesses, whenever the cost of production falls materially.

HATHAWAY (Record, pp. 3027-3028).

Thus in the Tabor Manufacturing Company selling prices fell ten to fifteen per cent in the last few years, while the general tendency of prices was upward.

The same was true of the Link Belt Company.

DODGE (Record, pp. 3137-3138).

"Mr. BRANDEIS. It does not pile up because the price of your article has been reduced?"

Mr. DODGE. Yes.

Mr. BRANDEIS. By ten or fifteen or more per cent?

Commissioner LANE. Why have you decreased the price of your article?

Mr. DODGE. I think we have never solved this problem. As we are reducing costs, we have never been able to keep from giving that away to our buyers, because so many of our contracts are based on cost.

Mr. BRANDEIS. Then, without or in spite of the effort that you might have made to retain the profit which has come to you, or which has come generally from the introduction of this scientific management, it has been divided between the workingman who has gotten an increase ranging from 25 to 35 per cent over the generally prevailing wage, as you understand it —

Mr. DODGE. As I understand it, yes.

Mr. BRANDEIS (*continuing*). And a part of it has come to the Link Belt Company?

Mr. DODGE. Yes, sir.

Mr. BRANDEIS. And a part of it has gone to the public, which has exacted a lower price?

Mr. DODGE. And did n't say thank you, either. (Laughter.)"

GANTT (Record, p. 3498).

"Mr. GANTT. I do believe that if the time comes when all industries get onto this basis, you will find a continual reduction in costs and under proper conditions a continual reduction in selling price, and consequently a continual reduction in the cost of living. Consequently, everybody would be benefited without an increase of wages."

15. *The Introduction of Scientific Management a Process*

The introduction of scientific management is of course a process, not a single act, and a process in which the element of time necessarily plays an important part.

1. OBSTACLES TO BE OVERCOME.

The men now employed must be taught the science; and what is even more difficult with most persons, must be taught to accommodate themselves to new ideas. While the difficulty in dealing with human nature is great, the chief obstacles to be overcome are not with the laborers and mechanics, nor indeed with the labor unions, but with those in authority. It is the foreman and assistant foreman, the superintendents and assistant superintendents, the managers and assistant managers, who present the greatest obstacles, men with pride of opinion, who feel, unwarrantably, that the introduction of a better system involves a criticism of themselves; subordinate officials who see their power diminished by the assumption of responsibility on the part of the management; and men with petty authority, who regard the appearance of the efficiency engineer as an intrusion upon their domain.

(a) GANTT (Work, Wages and Profits, pp. 130-132).

"Among the obstacles to the introduction of this system is the fact that it forces everybody to do his duty. Many a man in authority wants a system that will force everybody else to do his duty, but will allow him to do as he pleases. The 'Task and Bonus' system when carried out properly is no respecter of persons, and the man who wishes to force the workman to do his task properly must see that the task is properly set and that proper means are available for doing it. It is not only the workman's privilege, but his duty, to report whatever interferes with his earning his bonus, and the loss of bonus soon educates him to perform this duty no matter how disagreeable it is at first. We investigate every loss of bonus, and place the blame where it belongs. Sometimes we find it belongs pretty high up, for the man who has neglected his duty under one system of management is pretty apt to neglect it at first under another. He must either learn to perform his duty or yield his place, for the pressure from those who lose by his neglect or incompetence is continuous and insistent. This becomes evident as soon as the task and bonus gets fairly started, and the effect is that opposition to its ex-

tension develops on the part of all who are not sure of making good under it, or whose expert knowledge is such that they fear it will all soon be standardized. The opposition of such people, however, is bound to give way sooner or later, for the really capable man and the true expert welcome these methods as soon as they understand them."

(b) GANTT (Record, p. 3469).

"Mr. GANTT. The principal obstacle is that it makes every man attend to his job. As a matter of fact, almost everybody wants to have the other fellow attend to his job and let him do as he pleases; but this system of management is such that the workman forces his foreman to do his job, the foreman forces his superintendent, and the superintendent forces the manager.

Commissioner PROUTY. You find the general obstacle is with the management, with the owner of the business?

Mr. GANTT. As a rule."

And yet, with the exercise of patience and tact, these difficulties, however great, can be and have been overcome.

GANTT (Work, Wages and Profits, p. 132).

"The fact that the task and the bonus enable us to utilize our knowledge and maintain our standards, and that the setting of tasks after a scientific investigation must necessarily not only increase our knowledge but standardize it, brings to our assistance the clearest thinkers and hardest workers in any organization. Our greatest help, however, comes from the workmen themselves. The most intelligent soon realize that we really mean to help them advance themselves, and the ambitious ones welcome the aid of our instructor to remove obstacles that have been in their way for perhaps years. As soon as one such man has earned his bonus for several days, there is usually another man ready to try the task, and unless there is a great lack of confidence on the part of the men in the management, the sentiment rapidly grows in favor of our task work."

2. FINDING BETTER METHODS.

Time is not only an important element in the mere introduction of scientific management, but much time must

necessarily elapse before the full benefit of scientific management can be attained. For progressiveness is of the very essence of scientific management; and the effort must be constantly made to seek with an open mind a better method of performing every operation. That involves intensified observation, research, and study into a territory largely unexplored.

3. GREAT GAINS IN SHORT TIME.

But although the largest benefits from scientific management cannot be secured for many years, very substantial gains can be secured in a short time.

(a) GILBRETH (Record, p. 3407).

"I tell you it will reduce your costs the first day you put it in. If you can spend the \$25,000 Mr. Towne did, and have all of those refinements, as in a permanent mill under one cover, as Mr. Scheel testified, you are going to have still greater benefits; but who can afford in work outside, in contracting, as in my work — I can tell you about my work and not about any other — who can afford to spend \$25,000 before he gets started? I do not know of anybody. We can give you those economies the first day if you take scientific management, and I urge you, gentlemen, to accept the invitation of Mr. Dodge of the Link Belt, and the invitation of Mr. Gantt and Mr. Scheel."

(b) EMERSON (Record, pp. 3559-3561).

"Mr. BRANDEIS. You have stated that these great economies were possible. In your opinion are large economies obtainable within a relatively short time?"

Mr. EMERSON. There are certain economies which would take a very long time to accomplish. There are others, by far the largest, that it would take some time to accomplish, because it would depend upon the process of education. There are other economies in which results could be obtained in a comparatively short time. As I mentioned on the Santa Fé, the management they attained half the result between what they were doing and what I thought was an ideal performance, in two years' time.

Mr. BRANDEIS. Speaking generally, how do they go about the attaining of these economies?

Mr. EMERSON. We never paid any attention to attaining economy. The only thing we paid any attention to was the attaining of efficiency, feeling absolutely certain that economy would result as a by-product.

Mr. BRANDEIS. How would you go about attaining efficiency?

Mr. EMERSON. We brought with us, or ascertained from any sources that were available, by investigating, by past knowledge, by performing elsewhere, certain standards. We compared those standards with results actually being obtained. We then investigated all the conditions that resulted in this inefficiency of attainment, and we proceeded to eliminate the obstacles in the way.

For example: when I first went with the Santa Fé I knew that belting could be and can be maintained for 14 per cent of its first cost; that is, belting that is used in the shops. When we collected the records, we found that the cost of maintaining belting was 100 per cent of its first cost.

Mr. BRANDEIS. You mean the annual cost?

Mr. EMERSON. The annual cost. If you had fifteen thousand dollars worth of belting it was costing fifteen thousand dollars a year to maintain it, when it should cost in the neighborhood of about two thousand dollars.

Having that standard, and having the records showing the cost, we went to work to eliminate the causes of loss. We asked, in the first place, that they should give us the best belting made, without regard to cost. We wanted quality and not cost. We paid, in fact, five per cent above the market prices for the privilege of rejecting any belting that did not prove satisfactory. We next asked that the belting should all be put in the hands of one man, who should have exclusive charge of it, instead of allowing men that did not know much about it to repair their own belts on over-time. The third instruction given to the man was that he should have no belt failures; that is, that he should repair his belts before they broke down, and not afterwards, just as on a railroad you keep bridges maintained and do not wait for a train to go through the bridge before you build it up. As a result, we reduced belt failures by this method. The belt failures were reduced from 300 a month down to 50, and the cost dropped from 100 per cent down to the 14 per cent, which was the standard. Incidentally, we did not delay the machines,

and we had more output and better satisfaction from our belting. That same method was applied straight through every shop, to machinery and tools and locomotives, and right straight through the whole thing."

16. *Scientific Management and Labor Unions*

The claim has been made that scientific management and labor unions are inconsistent; that the organization of labor presents insuperable obstacles to the introduction of scientific management in railroads and other industries where unionism is potent. This claim, we believe, is wholly unfounded in fact.

(a) Collective bargaining is alike an important function under scientific management and under the old system.

GANTT (Record, pp. 3495-3496).

"Mr. BRANDEIS. But it is, as Commissioner Clark has pointed out, perfectly possible, and indeed very probable, that there would always be two sides to the bargain?

Mr. GANTT. Yes, sir.

Mr. BRANDEIS. Because you would have to fix the terms where the bonus would begin, and the amount of the bonus, and therefore collective bargaining in the sense of having a union to represent the workingmen, would not be so frequent perhaps in its application; but it would be just as necessary and just as beneficial in its operation as it is to-day, only under a system which, instead of producing friction and hostility, would produce the opposite; is not that so?

Mr. GANTT. I believe that is so.

Mr. BRANDEIS. And where, further, Mr. Gantt, operating under a system, the parties could come together with the knowledge of facts scientifically ascertained on which to reason out and base the conclusions that should come from that collective bargaining?

Mr. GANTT. I agree with you entirely. There is one thing which I have found throughout all my work: when the real facts were known, when each side stopped bluffing against the other, there was but little difficulty in coming to a proper agreement.

The reason why we do not have an agreement usually is because the two parties do not understand each other.

Commissioner CLARK. Other people have found the same thing." (See Emerson: Record, pp. 3531-3532, quoted above, pp. 53, 54.)

(b) Unionism does not prevent the introduction of scientific management. It is true that unions, in some trades, have bitterly opposed the introduction of the piece rate or the bonus system *without scientific management*, just as other unions have opposed the day rate system *without scientific management*. And very intelligent labor leaders have from time to time objected — and objected properly — to ruthless methods of "speeding up"; but, as shown above, "speeding up" is not scientific management; nor, as also shown above, is the piece rate system, with or without a bonus, scientific management.

It will always require tact and patience to introduce radically new methods, whether the persons to be affected are organized or unorganized workers or are those "higher up." Tact and patience are essential to the introduction of scientific management in any business. But the experience of those who have been engaged in the introduction of scientific management in various businesses, in some of which closed, in others of which the open shop prevailed, clearly establishes that unions have not presented any obstacle to the introduction of scientific management, as soon as the nature and purpose of the changes proposed were understood and the good faith of the management was apparent.

(a) GILBRETH (Record, pp. 3401-3402).

"Your Honors, in answer to that first question of whether or not this scientific management can be applied to unionized shops or so-called closed shops, I wish to say that we have always made it a point to deal with unions by preference. In some localities where our work exists there are no unions, and in some cases there will

be union men and non-union men on the same job; but we have always made it a point to give preference to union men and union conditions.

We find that the men, as soon as they understand this, are very heartily in favor of it. There is no opposition whatever from any union man as soon as he knows what it is. Sometimes there is opposition from one of the foremen or an entire union during that period that they think there is a new game being sprung on them. They naturally are suspicious under the long period of wrong treatment that has come to them for generations, but they seldom act during that period. They never have acted on my work during that time, and by the time that they have finished considering what they will do they are converted and as a body are the best allies we have in installing scientific management."

(b) WILLIAMS (Record, pp. 3431-3433).

"Mr. BRANDEIS. You are the manager of the Manhattan Press of New York?

Mr. WILLIAMS. Yes.

Mr. BRANDEIS. And in that press you have introduced some of the principles of scientific management?

Mr. WILLIAMS. Some of them.

Mr. BRANDEIS. And you have introduced some of these principles in departments of your press, which is practically a closed shop?

Mr. WILLIAMS. One department, yes.

Mr. BRANDEIS. And that is the —

Mr. WILLIAMS (*interrupting*). The press room.

Mr. BRANDEIS. And the press men's union in New York is a very strong union?

Mr. WILLIAMS. Very strong.

Mr. BRANDEIS. In introducing these principles, you have introduced among others, the principles of the individual daily record of the men?

Mr. WILLIAMS. Yes.

Mr. BRANDEIS. And also the principles connected with it of paying the man a bonus who has reached the standard?

Mr. WILLIAMS. Yes.

Mr. BRANDEIS. Will you state whether or not, Mr. Williams, you have been confronted with any difficulties or obstacles on the part of the unions to the introduction of these principles of scientific management?

Mr. WILLIAMS. None but what, as soon as the men got confidence, would disappear. They do not believe it. They cannot understand that you are really wanting to pay them extra money; as soon as they can once get that through their minds, you have no trouble at all. We had to hold up the bonuses — I don't know just how long, but certainly three to five weeks — before they would take them. We kept putting them in the drawer, and finally some of them got brave enough to take them. We had a scheme of paying them which was one of my own ideas. We did not pay the bonus with the pay. We paid off on Friday, and we paid the bonus on the following Wednesday. One of the fellows said to me: "Those few extra dollars that we get on Wednesday come along about the time that we are hard-up, and they are better than the whole damn pay roll, that we have to take home. (Laughter.)"

(c) GANTT (Record, pp. 3461-3462).

"Mr. BRANDEIS. Mr. Kent testified to the introduction by you in the Canadian Pacific shops at Angus of some parts of the principles of scientific management. Do you happen to know, definitely, of the attitude of the union there, or the union officials, to the work?

Mr. GANTT. About a year after we began that work, Mr. Vaughan, who has charge of it all — he is assistant to the vice-president in charge of operating — said he had a very interesting session with a committee of the labor union; and he had told them that he had a piece work system that could not be cut. They felt very skeptical, but they listened to what he had to say and went away; and they have never made any comment since. They are apparently entirely satisfied. I have not heard that they have ever said anything about it since.

Mr. BRANDEIS. Mr. Gantt, is not this one of the things that happened: That they asked him what he was doing, and he said he was getting a very high-priced man to teach them to do the work easier?

Mr. GANTT. Something like that; something in that line; that he was getting the best man he could to teach those people to do the work easier. That is what we are working at. We are trying to find the easiest, and the easiest is usually the best, way of doing the work, and then teaching those who would not normally learn that method, — teaching them and helping them to apply it."

(d) KENT (Record, pp. 3442-3443).

"Mr. BRANDEIS. Will you state what you found to be the attitude of the officials in charge of the work there toward the system, so far as the introduction of it was concerned?

Mr. KENT. One of the foremen said that if they went back to the old method of doing things, he would quit his job; that he would not stay there.

Mr. BRANDEIS. What did the superintendent say?

Mr. KENT. Why, he was most enthusiastic. His labors were considerably lightened, it seemed, and he was able to give more attention to the actual planning of the work of the shop.

Mr. BRANDEIS. Do you know whether that shop is an open shop or a closed shop?

Mr. KENT. It is a union shop."

(e) HATHAWAY (Record, pp. 3064-3067).

"Mr. BRANDEIS. What is the attitude of the men in your shop towards this work?

Mr. HATHAWAY. The men who work in our shop under this scheme seem to be perfectly satisfied and contented with it. We have had some men who have left our employ for a time and worked under the old conditions, who were always very desirous of coming back to us. After they once work under this scheme and understand it, they seem to prefer it to the old scheme.

Mr. BRANDEIS. Has there been at any time any complaint or is there any complaint in your shop that the men are being speeded up or made to work harder?

Mr. HATHAWAY. No, none that I have heard.

Mr. BRANDEIS. Your shop is situated in what might be called the machinery manufacturing district, is it not?

Mr. HATHAWAY. Yes.

Mr. BRANDEIS. You are surrounded by quite a number of manufacturers?

Mr. HATHAWAY. Yes, there are a great many.

Mr. BRANDEIS. How many machinery manufacturers?

Mr. HATHAWAY. There are five or six large representative concerns, among them the Baldwin Locomotive Works, which, of course, is of itself much greater than all the rest of them together.

Mr. BRANDEIS. The Midvale Steel Company?

Mr. HATHAWAY. That is some distance from us, but in the same

city. Right in our immediate neighborhood there is William Sellers & Company, Harrington & Sons, the Newton Machine Tool Works, and there are a few smaller concerns, but those are the principal ones.

Mr. BRANDEIS. At the time last spring of the general strike in Philadelphia, what was the attitude of the men in your shop as compared to what it was in the surrounding shops?

Mr. HATHAWAY. We had one man who joined in the sympathetic strike or general strike, whereas Baldwin's had some 2,000 or more, I believe; William Sellers had about from one-half to two-thirds of their force; Newton Machine Tool Works had practically all of their men out; Harrington had most of their men out. We had one man out.

Mr. BRANDEIS. Did you yourself make any effort to retain the men?

Mr. HATHAWAY. No.

Mr. BRANDEIS. At that time?

Mr. HATHAWAY. No.

Mr. BRANDEIS. Is it absolutely true that the action of the men in remaining, all except that one out of seventy-five, was entirely of their own motion?

Mr. HATHAWAY. Yes.

Commissioner PROUTY. Is your shop a union shop?

Mr. HATHAWAY. Our shop is an open shop; we have some union men and some non-union men.

Mr. BRANDEIS. How is it with regard to these other shops you have spoken of?

Mr. HATHAWAY. They are all in the same fix.

Mr. BRANDEIS. They are all open shops?

Mr. HATHAWAY. Yes.

Mr. BRANDEIS. They are none of them closed shops?

Mr. HATHAWAY. I think in Philadelphia there are practically no closed machine shops. I do not know of any.

(f) KENDALL (Record, pp. 3436-3437).

"Mr. BRANDEIS. In the Plimpton Press, which is a printing and binding establishment, complete, you have certain departments in which there are a number of union men?

Mr. KENDALL. We have.

Mr. BRANDEIS. And have you, in those departments, met any obstacles on the part of the unions to the introduction of those features of scientific management which have been applied?

Mr. KENDALL. We have met with no obstacles whatever; but the same attitude which applies to non-union employees has also applied to the union employees. The average American workman, in fact the average workman of any country, appreciates lack of trouble. Scientific management does away with his trouble. The bonus feature is an additional help, and the union and the non-union men are welcoming these features which do away with their trouble, and are also welcoming the bonus features."

(g) EMERSON (Record, pp. 3558-3562).

"Mr. BRANDEIS. In your effort to improve the efficiency of various concerns, has the question come up for consideration as to any difficulties or obstacles presented by the workmen themselves and particularly by the labor unions?"

Mr. EMERSON. Occasionally that question has come up. On the whole, that has not been our difficulty.

Mr. BRANDEIS. What difficulty has there been?

Mr. EMERSON. The difficulty has been generally in persuading the management to take the necessary steps to bring about the results. When I say "management" I mean somebody above the ordinary workman. It might be the foreman or the superintendent, or it might be the general manager. It might be anyone that is in the line above the workman."

17. *Scientific Management Applicable to all Businesses*

Experience has already demonstrated that the principles of scientific management are general in their application, and can be introduced into practically all businesses, and all departments of any business. They have been successfully applied in private competitive businesses, like machine shops and factories, steel works, and paper mills, cotton mills and shoe shops, in bleacheries and dye works, in printing and book-binding, in lithographing establishments; in the manufacture of typewriters and optical instruments, in construction and engineering work, and in establishments not commonly regarded as business, and

recently to some extent they have been introduced by the United States Government into the manufacturing departments of the Army and Navy.

The application of these principles has been no less successful in the field than in the shop. They have been found applicable alike to the most skilled and to the most unskilled labor, to conditions where men work in large numbers together in a single factory, and where they are more widely scattered.

They have been applied in businesses of great complexity, in which the articles manufactured differed widely, as well as in businesses where the work is largely repetitive, and this result would seem to follow necessarily when one considers what scientific management is — that is, what the main principles are which compose it: namely, preparedness; separation of planning from performance; the analytical study of every operation, with a view to determining the best possible methods, tools and machinery; the management thus performing its proper function, — of enabling the work to be done under best possible conditions; and the keeping of a current record of the efficiency of men, equipment, and materials.

The evidence produced as to the value and general applicability of the principles of scientific management was deemed by the Commission to have been so conclusive, that upon the suggestion of the acting Chairman we refrained from calling additional witnesses to this point.

"Commissioner PROUTY. Mr. Brandeis, you can hardly add anything to your case by calling the representatives of some other industry and showing these same principles have been applied there. It is perfectly evident that if they have been applied in one case they can be applied in another analogous case. If the railroads were to show, in answer, some facts which tended to prove that they could

not be applied to railroad operations, then you might desire to go further; but it seems to me you have made out your case now as far as it can be made out. If you have anybody who can show this method has been applied to railroad operation, he would be a material witness." (Pp. 1387-3388.)

"Commissioner CLEMENTS. . . . Of course this thing could be carried on and on almost indefinitely with respect to different lines of business.

Mr. BRANDEIS. It could, indeed.

Commissioner CLEMENTS. And when you have shown that fact, and what you have done with respect to several kinds of business, and the details of it, so far as it may be helpful to any extent, does not that illustrate the possibilities in all lines of business just as well as if you were to call them in other cases?

Mr. BRANDEIS. It does to my mind absolutely, but I did not know that others, who had given less consideration to the subject, might be so ready to accept the conclusion which we ourselves have formed. I will endeavor to act upon the suggestion of the Commission."

(Mr. Clements was then sitting as Chairman during Commissioner Knapp's absence.) (Record, pp. 3389-3390.)

18. *Scientific Management is Applicable to Railroads*

No good reason can, it is believed, be alleged why scientific management is not applicable to most departments of railroads.

(a) TOWNE (Record, pp. 3292-3300).

"Mr. BRANDEIS. Have you considered, Mr. Towne, at all, the question of the possibility of economies in connection with railroad operation?

Mr. TOWNE. I have often given it casual thought, in connection with my general interest in this great subject; and since this investigation commenced, and my attention as President of the Merchants' Association of New York was directed to the shippers' side of the case very strongly, I have given a great deal of thought to the effort to see how my experience in industrial management

and manufacturing might indicate to me the possibilities of similar results in the field of railroad management.

Although I confess to no experience in that field, I have had the same opportunity that any citizen has to come in contact with it, as a business man and otherwise. In addition to that I have a pretty large acquaintance among railroad men and have frequently discussed with them the problems that they are working out in this direction, so that I have some general knowledge; but none that I pretend to class as expert knowledge.

Mr. BRANDEIS. However, have you any opinions or suggestions on the subject which you think would be of value to the Commission or might possibly be?

Mr. TOWNE. Why, it seems to me that there are almost as great possibilities for self-help on the part of the railroads as there are and have been proved to be on the part of manufacturing industries.

They have a great many problems that are similar, and some that are identical. Take the case of their machine shops and repair shops, which are quite a large element in their organization and in their total outlay. They have precisely the same conditions as exist in any machine shop or car-building shop which is devoted to a similar work of a general kind.

I have no doubt whatever that the systems which are being so successfully developed now, in many private establishments, for increasing the efficiency of machines and of men, in machine shops and foundries and wood-working establishments, can be utilized and availed of in the corresponding shops of the railroad companies, especially the large ones.

Commissioner LANE. Do you know that they are not?

Mr. TOWNE. I imagine that they are being availed of in some places and to some extent. I should doubt, exceedingly, that they are availed of widely, or else, from my general reading in engineering matters, I would have known something about it; and I doubt whether, in any case, they are availed of as fully and effectively as they are in some private establishments. For one reason, the incentive is wanting. The railroads are not operating, in this respect, at least, under the competitive conditions which private industries are, and they lack the stimulus which the private establishment has, and sometimes has acutely, as my own did in the years after 1893 — the stimulus to take up and study and solve problems of this kind. The men who are responsible for the management of

these particular railroads that I have been speaking of have little or no pecuniary interest in it, and their superior officers have none except of the general character of their responsibility to their next higher officials and to the stockholders. But there is not the same sense of acute personal, direct responsibility that there is in a private corporation, and especially in a corporation where the chief owners are the chief managers.

The experience that has been gained under conditions of that kind, which are the most favorable conditions, is open to the railroads for study and for approbation and utilization, if they see fit to seek it and avail of it.

But I see other directions in which, it seems to me, the railroads are far behind the times in these matters, and in several directions. One of them is in the effort to utilize modern mechanical skill and ingenuity and experience in every productive industry that I am familiar with, and I know something about quite a number of them. Inventive ability and experience have developed wonderful changes in the last twenty-five years, in the last ten years, in the substitution of better machines, machines that are largely automatic in many cases, and in the more intelligent application of human labor, even to machines which are unavoidably not automatic.

In every mechanical industry there is a constant effort to study this problem, and to achieve further success in it. In fact, I think most people who have been in touch with it feel that, with all the wonderful things that have been accomplished, we have only made a beginning, and that greater results are surely before us in the future.

On the part of the railroads, I fail to see any corresponding effort. I do not see that the railroads have awakened to the existence of these conditions, so far as their employment of manual labor in the performance of the work of the railroads is concerned. And manual labor constitutes a very large part of the expenditures of every railway, in the handling of freight, of baggage, of the manipulation of traffic, and so on — it is all manual labor. And as to the cruder parts of it, the railroad companies to-day are employing the same means of utilizing manual labor as the Egyptians did, or would have done if they had had railroads in those days.

Commissioner LANE. Will you be a little bit more concrete on that proposition?

Mr. TOWNE. I will. To take a somewhat minor example: All of

us citizens who have to travel on the railways are unpleasantly familiar with the crudity of the systems employed at present, or lack of system, in handling passengers' baggage. We know how our baggage is maltreated and damaged, and any one who will think of it for a minute will see that there has not been the faintest effort to apply modern mechanical appliances to the handling of baggage, except in a few of the great terminals where they do use an elevator to hoist it from one level to another. The witness who preceded me, Mr. Dodge, has made it the business of his life to design conveying machinery, and there are four or five other large establishments and many smaller ones in this country who make that their sole business, designing and building machinery for the conveying of materials of all kinds. It is a surprise to me that they have not taken up this problem, on their own initiative; but I am quite sure that any or all of them would be glad to take it up on the initiative of the railroad companies, and endeavor to find methods for handling baggage mechanically, at least in the larger terminals, if not in the smaller stations.

Whatever may be possible in the way of handling baggage mechanically, a vastly greater field exists in the possibilities of handling freight mechanically. It is done already, by some of the great coal carriers, and to some extent, in the handling of coal, and in a few cases that I have seen, in the handling of sand, materials that will flow, like sand and coal. But no effort has been made that I know of, to apply mechanical methods to the handling of the vast volume of merchandise which the railroads handle at every terminal, onto their platforms, from the platforms to their cars, back again from the cars to the platform, and from the platform to the truck, or whatever else it is carried away in. Millions of tons of material, taking the country as a whole, are moved every day, and moved by the crudest kind of labor. I am absolutely sure, as to some cases — I believe in a great many cases — probably in all of the great terminals, that mechanical appliances could be successfully availed of, at least for some part of that work; probably for a great part. But, so far as the public knows, no effort has been made in that direction whatever.

I see another field, drawing an inference from my own experience as a manufacturer, in which I believe that the railroad companies have not gone far, and some have not ventured at all; and that is in what has come to be known, under the nomenclature of this modern

scientific industrial system, as functional management. I can illustrate or explain that in a few words, best by reference to a factory or workshop of the average kind and size.

Under old conditions, what was sometimes referred to as the military system prevailed, in which the foreman or superintendent of each department or room was responsible for everything done in that room, — the discipline, the adjustment of wages, the allotment of work, the instructions to the workmen as to what they were to do and how they were to do it, the inspection of the product of the workmen, and, in fact, everything pertaining to the management of the work in that room was concentrated in the hands of one person, possibly having some assistants.

Under the functional system, on the contrary, the management of one room will be covered by four, five, six, and in some cases even ten different persons, the responsibility of each of whom runs on functional lines. One man will have to do with the employment of help. Another with the adjustment of wages and piece rates; another with the allotment of work, its distribution to the different men and machines; and another with the ascertainment of labor costs, and so on. The functional system, where it has been availed of intelligently, is proving itself over and over again to be the sounder system of the two. It is in line with the specialization in all of the sciences, in medicine, in law, and so on, that a man who devoted his whole time to one single line of study or research or work becomes more skillful and expert in that than if he attempts to diffuse his labors over a multitude of operations. That higher or intensified skill results in the ascertainment of better methods, much to the operation in the plant where the functional system is in use.

We can see that if the railroads are not already fully availing themselves of the functional system, there must be a very great opportunity for them to do so. They could do that in their office work, in their great central administrative offices, which each one of the large systems has to maintain, and in the subordinate offices, which many or most of them maintain at other points, and throughout the operative system, wherever a large number of men are gathered together under one control and for a combined result."

(b) EMERSON (Efficiency, p. 80).

"Railroad practice has many standards, chiefly those of specification, of construction, and of times for passenger trains. No railroad

has ever determined any cost standards either for maintenance or operation of equipment, maintenance of way, or consumption of fuel, yet there is no railroad in the country on which each one of these cost standards could not be determined in a very short time and with very close accuracy, at a cost equal to the saving effected in a single month."

(1) Maintenance of equipment, consuming about 20 per cent of all operating expenses, involves conditions in machine shops, locomotive and car shops and yards, similar in large measure to those under which scientific management has been most successfully applied in private businesses.

The fact that the Atchison, Topeka and Santa Fé Railroad and the Canadian Pacific Railroad Company have, to some extent, introduced principles of scientific management in their machine shop and locomotive shops with good results, is an illustration of this.

(a) EMERSON (Efficiency, p. 80).

"When each unit of locomotive repair is standardized, the sum of the units shows a cost between \$0.03 and \$0.06 a mile for maintenance. The actual average costs on the railroads are between \$0.06 and \$0.12 — therefore twice what they ought to be. The standardized cost of maintaining freight cars is as low as \$30 per annum. Actual average costs run from \$45 on some roads to over \$100 on others."

(b) EMERSON (Record, pp. 3540-3542).

"Commissioner PROUTY. Proceed, Mr. Brandeis.

Mr. BRANDEIS. If you desire, I can read from this book, "Methods of the Santa Fe," the figures for the different years, which may perhaps answer some of the questions which you have asked the witness in regard to the effect during a period of years.

This is on page 37 of Mr. Going's book.

Repairs and renewals to shop machinery and tools. 1902 to 1903: Total charges, \$401,809; cost per locomotive, \$306.96; cost per tractive unit, \$9.0136.

1903 to 1904: Total charges, \$487,170; cost per locomotive, \$339.96; cost per tractive unit, \$.0132. 1904 to 1905: Total charges, \$486,620; cost per locomotive, \$334.68; cost per tractive unit, \$.0127.

1905 to 1906: Total charges, \$367,474; cost per locomotive, \$225.03; cost per tractive unit, \$.0081.

1906 to 1907: Total charges, \$315,844; cost per locomotive, \$176.35; cost per tractive unit, \$.0060.

1907 to 1908: Total charges, \$290,809; cost per locomotive, \$157.11; cost per tractive unit, \$.0053.

In other words, between 1903-4 and 1907-8 the repairs and renewals to shop machinery and tools dropped from \$487,170 to \$290,809; the cost per locomotive from \$339.96 to \$157.11; and the cost per tractive unit from \$.0132 to \$.0053.

Mr. Going says at page 58 in his book:

"The table below shows the economy in the labor account for engine repairs over a five years' period."

He then goes on to detail that in the fiscal year 1902-3 the labor cost was \$2,362,000; the number of locomotives owned was 1309, and the cost per engine was \$1,804.

In the fiscal year 1903-4 the labor cost was \$3,000,122, the number of locomotives owned 1433, and the cost per engine \$2,094.

In the fiscal year 1904-5 the labor cost was \$3,336,963, and the number of locomotives owned was 1454, and the cost per engine was \$2,309.

For the fiscal year 1905-6 the labor cost was \$2,739,195, the number of locomotives owned was 1633, and the cost per engine was \$1,677.

In 1906-7 the labor cost was \$2,800,250, the number of locomotives owned 1791, and the cost per engine was \$1,564.

In 1907-8 the labor cost was \$2,763,825, the number of locomotives owned was 1851, and the cost per engine was \$1,493.

In other words, the cost per engine drops from \$2,309 in 1904-5 to \$1,493 in 1907-8.

Commissioner PROUTY. That is the labor cost?

Mr. BRANDEIS. That is the labor cost, yes, sir."

(c) EMERSON (Record, pp. 20-22).

"Railroad repair shops throughout the country do not show 50 per cent efficiency on an average as regards either materials or labor. A case observed was as follows:

A foundry made, for a railroad shop, big cylinder bushings. These,

after being machined in the railroad shop, weighed about 375 pounds, but the original casting weighed 1,780 pounds. It took three days to remove 1,405 pounds of cast iron. It should have taken less than one day if the rough bushing had weighed only 600 pounds. The difference in result is reduced to financial expression in the following table:

COMPARISON OF COSTS

	As made	Standard
Weight, rough.	1,780	600
Cost per pound	\$0.04	\$0.04
Total cost	\$71.20	\$24.00
Labor	3 days	1 day
Cost of labor, \$3.00 per day.	\$9.00	\$3.00
Machine charge, \$2.00 per day	\$6.00	\$2.00
Overhead charges, \$2.00 per day.	\$6.00	\$2.00
Total cost	\$92.20	\$31.00

In this same shop the most efficient men were checked up and found to average only 60 per cent in actual output, compared to realizable standards. At the end of two years of persistent effort many of the best men were brought up to 110 per cent efficiency, but there were still men as low as 10 per cent as to actual output compared to reasonable standard — the same standard on which others realized 110 per cent.

In another big locomotive shop, a careful study of the machines which had been in operation for 20 years showed that the location of 75 per cent of them would have to be changed, so as to facilitate the orderly, effective, and economical progress of work from one to the other. This and other eliminations of wastes doubled the output, with less labor costs.

In consequence of general shop inefficiency and operation inefficiency due to similar causes, locomotive repair costs, on Western railroads, run from \$0.08 to \$0.12 a mile; yet a most efficient superintendent of motive power on a large transcontinental road succeeded in dropping to \$0.05 and had only touched the high spots, his well-considered opinion being that \$0.04 was reasonably attainable. On another transcontinental road, repair costs per mile were dropped from \$0.1374 to \$0.08 by persistent effort, but when the efforts were relaxed expenses immediately rose to \$0.17. They should have come

down to \$0.06. Eastern and Southern roads, with their small engines, better coals, and better waters, are not to imagine that they show any higher efficiency. They are on the whole worse.

A leading eastern road established piece rates in its car shops and then limited the earning power of the men. When there was a sudden demand for increased car repairs, the limit was taken off and the men doubled their earnings. Then the limit was put back. The large Eastern roads have signally failed in attempts to increase the efficiency of their repair shops.

In a leading Southern shop many men were receiving 12-hours pay for 3-hours work."

(d) KENT (Record, p. 3442).

"Mr. BRANDEIS. Will you state what you found to be the attitude of the officials in charge of the work there toward the system, so far as the introduction of it was concerned?

Mr. KENT. One of the foremen said that if they went back to the old method of doing things, he would quit his job; that he would not stay there.

Mr. BRANDEIS. What did the superintendent say?

Mr. KENT. Why, he was most enthusiastic. His labors were considerably lightened, it seemed, and he was able to give more attention to the actual planning of the work of the shop."

(2) Maintenance of way consuming nearly 20 per cent of the total operating expenses of railroads, involves conditions in many respects similar to work done by contractors, and to field work done in connection with other private businesses.

(a) EMERSON (Efficiency, pp. 80-81).

Standards of maintenance of way vary, but innumerable assays of actual work show a maintenance-of-way labor efficiency of scarcely more than 30 per cent.

(b) TOWNE (Record, pp. 3202-3303).

"I think there was one other point, Mr. Brandeis, if you will allow me to add to this somewhat long answer to your innocent question: The previous witness has explained, I believe, what is known as

time-study, which is a very modern, recent invention. There were spasmodic attempts to understand and utilize it a good many years ago, but it was not intelligently understood and utilized until within the last few years. It has been shown by Mr. F. W. Taylor and Mr. Gilbreth and others that the use of the time-study system, which is the application of brains to manual operations, will produce results, not merely in the operation of intricate machinery, but equally in the performance of the simplest operations, such as the handling of pig iron, the handling of coal, the laying of bricks, and so on.

The railroads are immense employers of unskilled labor. They use it in their construction work, in the maintenance of tracks, the laying of ties and of ballast and of rails, and in all of the repair work in their terminals and stations and of their stock; and, as far as I know, with a few exceptions, the exceptions being chiefly in the repair shops of the railroads, no effort has been made, or no test or experiment has as yet been made, to ascertain the extent to which time-study may be utilized in railroad work, to intensify production, with the result, as it is proved in industrial operations, of simultaneously reducing cost and increasing the wages of the workmen."

(c) GILBRETH (Record, pp. 3416-3417).

"Mr. BRANDEIS. From your own experience in your particular business of contracting and building and construction, what part of railroad operations or constructions could you speak of with perhaps the authority of experience as to its applicability there?

Mr. GILBRETH. Any hand labor, shoveling, picking, lifting, or carrying of heavy weights in their thousands of applications, whether it is the loading of freight or unloading of freight or any of those things. We have seen the art of shoveling, which we used to consider consisted of handing a man a shovel and seeing that he worked. We have seen that they have now established certain standards before we pass the shovel to the man, and by so doing we can get him to do three times as much work. I have seen cases, I know of cases that I have seen with my own eyes where it was nine times as much work with very little more effort on the part of the workman."

(3) Transportation consuming about 50 per cent of the total operating expenses of railroads, involves operations in which it is clear that scientific management would produce large results. For instance:

(a) The cost of fuel is on all railroads a large per cent of the total transportation expenses. It has been demonstrated that, by proper instruction, fuel consumption could be reduced at least one-half.

EMERSON (Efficiency, p. 81).

Staff determinations with a dynamo car showed that 1,000,000 B. t. u. in the coal were amply sufficient to furnish power to move a 1,000-ton train one mile. The actual coal charged to locomotives always contained more than twice as many, often three times as many, B. t. u.

EMERSON (Record, pp. 3551-3553).

Mr. BRANDEIS. You spoke, Mr. Emerson, of the fuel bill being a particularly heavy bill, and I understand as affording a special opportunity for economy. Have you made any particular study or observation on that subject?

Mr. EMERSON. Yes.

Mr. BRANDEIS. What?

Mr. EMERSON. On the Santa Fé we set up a system of records, or we had them set up for us, so we could utilize them, showing how many pounds of fuel they used per thousand train ton miles, freight train ton miles, and the average for the whole road was at that time 261 pounds. We started in then, by various suggestions and hints that were given to various officials, to see if we could not bring that fuel consumption down, and it did slowly come down. I think it ultimately reached 239 pounds.

We sent a young man up to the Chicago, Milwaukee & St. Paul to investigate their fuel records, which were among the best in the United States as to practices in the use of fuel at that time, and we found they averaged in the neighborhood of 175 pounds of fuel consumed. So we came back, and more or less set up as a provisional standard the 175 pounds.

About that time the superintendent of motive power wrote to me that a dynamometer car running on the road showed a record of 80 pounds. I ridiculed the record. I was skeptical. I would have to be shown. I checked up the fuel records and knew that 80 pounds was not a likely figure at all. That letter of mine was sent to this man that was running the dynamometer car and he wired back: "Mr. Emerson is the party we have been look'ng for. If there is anything

the matter with our record, we want to know how to improve them. Please send him here at once, or one of his representatives, to check us up." That called me very nicely, so I put one of my assistants, the same man that had been making locomotive studies, on the run out of Chicago, and told him to find out by actual weight just exactly how many tons of coal were necessary to move a thousand tons a mile. His report came back 78 pounds. I said, "Try it over again." I think the next time it was 81 pounds. He made three tests of that kind. By that time I was convinced that the dynamometer car man knew what he was talking about. I then went in person and spent some time with that car, and I found that it was actually consuming, on the most careful tests possible, in the neighborhood of 80 pounds, as against the average that was checked up of from 260 pounds down to 240 pounds.

(b) The terminal expense, particularly the loading and unloading of cars containing shipments in the less than car load lots, presents perhaps the most burdensome of all expenses of railroading. Nearly everywhere on American railroads the methods of loading and unloading pursued are substantially the same as those used in the days of the Pharaohs.

(See Towne, above, p. 75.)

(c) The purchase, care and use of materials and the utilization of plant present also wide fields for the application of scientific management.

(d) The avoidance of the terrible delays and irregularities in freight transportation offer a large field for increasing efficiency with incidental economy.

19. *How Railroads can Co-operate to Reduce Costs*

Railroad operation presents an especially favorable opportunity for co-operation through the introduction of scientific management.

The fact that the railroad business is subject in its accounting to the orders of this Commission, makes it possible for the Commission to require that each company ascertain and report to it the simple ultimate unit costs of each operation in every department of the road. The further fact that the railroad business is largely non-competitive makes it proper to publish these costs, and to give to each railroad the benefit of knowing the lowest elementary unit cost of each operation attained by any railroad, and how it was attained. The ascertainment of the ultimate unit cost is necessary before an instructive basis of comparison can be had. The knowledge that the average annual cost per locomotives of repairs, renewals and depreciation on one railroad is \$3832.37, and on another is \$2709.27, would be a very unsafe guide for determining the relative economy of operation on the two railroads. The conditions on the two railroads, and standards of renewal and depreciation may vary so that the company expending the greatest sum may actually have conducted its locomotive use and repair more economically than the railroad expending less. What is needed as a basis for comparison are the ultimate unit costs; the cost of turning a wheel, the cost of laying a tie or rail under particular conditions, and even that relatively simple operation must again be analyzed and separated into its ultimate simple elements.

The attainment by each railroad, for each operation, of the lowest cost attained by any railroad for that operation, would not, however, satisfy the demands of scientific management. To attain only the best that has been done presents rather the beginning than the end of economies which scientific management contemplates. With the ascertainment of the lowest existing costs the study must be made whether there are still waste time and effort involved in

the best existing method of performing that particular operation, and of eliminating such waste when determined. And when that shall have been done, there will still remain the wide field of research for a better way of doing the same thing.

The railroads have combined to maintain rates. There can be no proper objection to their co-operating in reducing costs — co-operating with a view to dividing among themselves the great task set by scientific management; the task of investigating how in each operation in each particular department greater efficiency can be attained, and how costs can be reduced; and then imparting each to each of the others the results of such investigations.

(a) TOWNE (Record, pp. 3000-3002).

"I see an opportunity for the railroads, also, to avail themselves of another thing, in which they have the advantage over private establishments, and that is by the adoption and utilization of a well-planned scheme of comparative statistics. If all of the railroads were keeping their accounts upon a common system, at least as to the more important of their operations, and if those accounts were made interchangeable, each railroad would have the advantage of learning, from month to month, what all the other railroads were doing, and of seeing how near the head or how near the feet of the procession his own system was. There would be a rivalry, a stimulus to each one of them, to know the direction in which their management was less efficient and economical than in the average or the best; and to try to catch up with these who were ahead, and to learn how they had reached these better results, and to attain the same end.

The railroads can afford to exchange information of that kind, because they are not directly competitive; whereas the private establishments exist under conditions of such intense competition that none of them can afford to open its books and records to its neighbor or its competitor and show how its economies have been attained; and therefore put the competitor into position to utilize those without any reciprocal compensation. As a matter of fact, no such interchange of information exists in competitive business.

The railroads could have that. I believe that, by availing of a system of comparative statistics and interchanging that information,

the railroads would derive incalculable assistance in studying the effects of that system, where they exist, and in improving their methods of management throughout.

(b) EMERSON (Record, pp. 3564-3565).

Mr. BRANDEIS. Is there any way you have to suggest to the Commission as to how the railroads collectively, or the railroads indirectly, through the Commission, could contribute largely to the reduction of cost of operation?

Mr. EMERSON. I think we have a splendid example of the kind of work that ought to be done in the Department of Agriculture of the United States. If an attempt should be made by every farmer to put on his own staff of specialists as to the growth of crops, he would find it very difficult, he could not do it; he could not find the specialists; he would find the burden very heavy. The Department of Agriculture collects the experiences of men all over the United States, and, for that matter, all over the world, and places those experiences at the disposition of those farmers who want to make use of them. Not only that, but they send out men to instruct communities and to instruct districts, to show them how it can be done. They pick up certain farmers who become models for their own community, and other farmers can imitate them.

The trouble in studying the records of the railroads as presented to the Commission is that they do not rest on what we call fundamental units. The figures at the top are accurate, but when you go further down you get into a fog, and you find you are in absolute uncertainty. It is one of the most difficult things in the world, for instance, to find out what mileage a locomotive has made. In the earlier reports the train mileage, I believe, is reported. It is not the locomotive mileage. On certain roads they count the train mileage as locomotive mileage, or sometimes the accredited amount of one hundred miles a day. Some railroads do not keep the records. So that what is needed is that there should be reliable records and a reliable exchange of information and opinion and instruction as to these fundamental units that go to build up the cost of the operation of a railroad.

Mr. BRANDEIS. And there should be, should there not, Mr. Emerson, a publication of those records under the control and direction of the Interstate Commerce Commission, so that the public, through its authorized representatives, might aid and assure them-

selves of the correctness and the use of that information, with a view to the reduction of cost, an operation in which the public is so largely interested?

Mr. EMERSON. I believe that is largely the practice of the Agricultural Department, except there it is voluntary, I believe.

20. *Eliminating Graft as a By-Product*

There is a persistent belief current that graft prevails to a large extent in the administration of many of our railroads. The recently discovered gross frauds on the Illinois Central (one of the railroads supposed to be well managed) is only an example. The investigation made by this Commission in 1906 into the "Discrimination and Monopoly in Coal and Oil," reported to the House of Representatives under date of January 25, 1907, disclosed such graft among officials of the Pennsylvania Railroad Company (page 26) under the administration of its great President, Mr. Cassatt, and likewise on the Baltimore and Ohio Railroad Company (page 28).

The frequent publication of unit costs of all of the railroads would be a great deterrent to graft. It would afford a practical means for disclosing, particularly in connection with the purchase of supplies and in construction work, the existence of excessive costs which are nearly always an incident of graft. A like publication of specifications and costs of work done under contract would conduce to the same end. The huge size of most of our railroad organizations makes such complete and intelligent publicity an essential condition of freedom from graft.

Scientific management, including a skillful application of the bonus system, would aid in the elimination of graft in ways other than publicity. By giving to various classes of employees a financial interest in securing particular

low costs as was done by the Brighton Mills, the graft of any employee would injure his fellows as well as the company; and the self-interest of the other employees would afford the railroad the best protection.

SCHEEL (Record, p. 3373).

"Mr. BRANDEIS. What had been the attitude of the men in one department toward any lack of efficiency in the other departments?"

Mr. SCHEEL. The critical spirit in one department against the performance in a preceding department has grown quite gradual where it affects the performance in the succeeding department. In other words, if the weave shed is going to suffer because of the poor performance of the filling winders, friendship does not any longer stand in the way of the management hearing of such incorrect work on the part of the filling department.

Mr. BRANDEIS. Then is it or not a matter of more or less frequent occurrence that the men themselves will come to the management and call attention to obstacles or defects which prevent the free and uninterrupted flow of work through the mills?

Mr. SCHEEL. I think so, yes, much more so than before."

21. *Railroads are not Scientifically Managed*

It is, no doubt, true that some of the railroads are competently managed, so far as that can be done under the old methods. Other railroads, while not managed competently as a whole, are no doubt managed competently as to particular departments, divisions, or operations. But so far as appears in evidence, scientific management has not been introduced into any department of any railroad operating within official classification territory. None of those persons who have been most carefully following the subject of scientific management have ever heard of any such introduction.

(Towne: Record, p. 3294.)

(Kent: Record, p. 3449.)

No railroad operating within official classification territory has even made the claim that it had introduced the principles of scientific management. And we submit that in view of the following notice given by us at the close of our evidence on the subject of scientific management, it would not be open to any railroad to claim now that it had introduced scientific management.

"Mr. BRANDEIS. May it please your Honors, as we understand the situation, in view of the evidence that we have introduced, we suppose the burden of proof to remain upon the railroads, if this question of their need is at all to be considered, to show that they have attained, by means of scientific management, the possibility in economies in operation which we believe do not exist.

So far as we are advised, there is not, within official classification territory, any railroad which has adopted methods of scientific management in matters relating to maintenance of way, or maintenance of equipment, or to the handling of freight, transportation or terminal.

Perhaps I ought to say that certain information was given me in confidence to the effect that upon one railroad, in one small part of that railroad, in one department of it, certain principles of scientific management have been introduced, with the same excellent effects in the way of economy which our witnesses have testified to. As that information was given in confidence, and as it has only come to me very indirectly, I have not thought it proper to call it otherwise to the attention of the Commission.

But if the claim is made on behalf of any railroad in official classification territory that it has instituted principles of scientific management, obtaining, therefore, the economies possible to which we have called attention, then I ask, in the first place, the privilege of examining, in a proper manner before an examiner (because I suppose this Commission would not have the time to permit me to do it) — I ask the privilege of examining before an examiner of this Commission the operating man or men of that railroad that makes such a claim. And I ask, in the second place, for the privilege of having our experts go into the shops, if shops they be, or otherwise to go where the work is done, and have access to the records of such railroads, with the view to determine whether or not, upon such inspection and assay as an expert only is competent to make, that claim has any

foundation in fact; in order that we may, not only through an examination of the operating men themselves, but also through that expert examination to be made by our experts who have examined the premises, the methods and the accounts, report to this Commission what the facts are."

22. *Scientific Management does not Involve Large Capital Expenditures*

The economies introduced by railroads within the last fifteen years—straightening curves, reducing grades, strengthening road beds and bridges so as to permit the use of large cars and engines, and purchasing these—have been attained only through large expenditures of capital. The economies incident to scientific management are attained, in the main, without additional capital investment. The introduction of scientific management would involve new expenses, mainly in the employment of new classes of labor; and their employment would be attended by the elimination of others. Indeed, the economies incident to scientific management, instead of calling for new capital, dispense to a large extent with the necessity of new capital. Many of the economies result from a fuller use of plant and equipment, and in the carrying of smaller stocks of materials. One of the commonest incidents of scientific management is the discovery that a plant believed to have been inadequate for the business undertaken proves to be too large or over-equipped.

(a) GANTT (Record, pp. 3475-3476).

"Mr. GANTT. Is it or not one of the incidents that you find in the introduction of your work that manufacturers have over-equipped?"

Mr. GANTT. In many cases the manufacturers have over-equipped their plants without knowing what capacity they can get out of the individual machines. They have never studied the capacity of individual machines, completely and fully.

Mr. BRANDEIS. And it is one of the important incidents, I understand, of your system that the machine is rated and the capacity of the machine is considered, and the cost of it, as constantly as the cost of labor, of the individual man?

Mr. GANTT. We take the individual machine and find out what its limitations are, what its capacity is. We frequently find a machine which has been built by a very good builder that has some weak point in it. By fixing that weak point, putting in a steel gear where we have a cast iron gear, for instance, we can double the output of that machine or in many instances increase it 50 per cent. We go on under the full development of this system to keep on finding out what the limitations of that machine are until we make perhaps a half dozen changes in it and get it up to its highest capacity. The most expert man in that work is Mr. Barth. He has devoted himself especially to that. He has made great improvement in many machine tools."

(b) GANTT (Record, pp. 3474½-3475).

"Mr. GANTT. Yes, sir. With regard to that, I would like to say this: We have spent a tremendous amount of money in developing machinery and we have spent very little money in developing men. If we should spend one-tenth the amount of money we have spent in developing machinery to develop men, I firmly believe we would double the average efficiency of the whole country. That is belief. Of course I cannot prove that. But I am firmly of the conviction that if we should spend one-tenth the amount of money and energy we have spent in developing machinery in developing men, we would raise the whole standard tremendously.

Mr. BRANDEIS. Is it a fact that in none of the business with which you have been connected, have you found, however great the expenditure upon instruction, that in every case however great it was it proved to be profitable?

Mr. GANTT. I have found it is the most profitable investment that any manufacturer can make, to instruct and develop his workmen. I might go further and say that a great many manufacturers are beginning to realize that and they are doing quite a little in that regard."

23. *Saving \$1,000,000 a Day*

The estimate that at least \$1,000,000 a day could be saved by the pursuit of methods of scientific management was first made by Mr. Harrington Emerson.

It is submitted that, with aggregate operating expenses by the railroads in 1908 of \$1,669,938,717, of which \$1,035,437,528 was for labor, this estimate appears moderate.

Mr. Emerson states how he arrived at his conclusion.

(a) EMERSON (Record, pp. 3543-3551).

"Mr. BRANDEIS. You have been quoted, Mr. Emerson, as stating that in your opinion, by the introduction of proper efficiency system or scientific management, the railroads of the United States could effect an economy of perhaps \$300,000,000 a year, or not less than \$1,000,000 a day.

Mr. EMERSON. That is correct — that is, I have been quoted as having stated that.

Mr. BRANDEIS. Is it your opinion that that is the fact?

Mr. EMERSON. At least that.

Mr. BRANDEIS. And in which of the departments of the railroad operation is it that large economies can be effected, in your opinion?

Mr. EMERSON. In all the departments except traffic. The efficiency of the traffic by my standards is very high; that is, the efficiency of expense in the traffic departments.

Commissioner PROUTY. Just what do you mean by the traffic departments?

Mr. EMERSON. That is one of the classifications, one of the five classifications, is it not?

Commissioner PROUTY. You mean the traffic department as classified by the Interstate Commerce Commission?

Mr. EMERSON. Yes.

Mr. BRANDEIS. Would you state to the Commission on what you have based your estimate that so large an economy in operation is possible?

Mr. EMERSON. There were four different ways of attacking the

problem. The final conclusion is a composite from the results obtained by the four different methods.

First, the long experience I have had in investigating intimately American shops all over the country had led me to realize that certain inefficiencies existed in different classes of labor, inefficiencies due to the absence of proper standard methods. These inefficiencies averaged fairly well over the whole country. They averaged fairly well in all businesses. Taking those inefficiencies as my judgment determined them and applying them to the bills for labor and for material in the railroads, I arrived at a certain result, which aggregated in excess of \$300,000,000. That was one way of getting at it.

Another way of getting at it was to take —

Commissioner PROUTY (*interposing*). Let us see if we understand that. Did you take the amount of the payroll in those departments and say that there was ten per cent actual inefficiency in this labor and subtract ten per cent from the amount of the payroll?

Mr. EMERSON. No, I took the report, for instance of 1908 —

Commissioner PROUTY (*interposing*). I do not mean that ten per cent was the figure you used, of course.

Mr. EMERSON. I understand. The total labor bill for 1908 was \$1,035,000,000. That covered all of what I classify as personal services as distinguished from materials and capital charges. Those are the three elements of expense. These are classified as to different lines of operation. I put an efficiency opposite each one of these classes, based on my general knowledge, that would have applied to other business as well as to the railroad business, and, as you state, multiplied it and arrived in that way at an estimate of the inefficiency of labor.

Commissioner PROUTY. And that was over \$300,000,000?

Mr. EMERSON. Oh, no, not for the labor alone.

Commissioner PROUTY. Do you remember how much it was for labor alone?

Mr. EMERSON. In the neighborhood of \$240,000,000, I think it was, for labor alone.

The next plan was to take the divisions as provided for by the Interstate Commerce Commission, and using such knowledge as I had in my experience, to check up the different operations like locomotive repairs, car repairs, shop machinery and tools, and track work, and to take each item of the total bill for all the railroads —

\$1,667,000,000, I think, for that year — and place opposite those items the inefficiency subdivided as to material and labor, and arrive at another estimate.

Commissioner PROUTY. What do you mean by "inefficiency of material"?

Mr. EMERSON. Engineers know very well and have determined how much horse-power you ought to get, or how much water you ought to evaporate from a pound of coal. If you are using a great deal more coal than that, there is an inefficiency. There is an ideal result which you ought to get which would be a horsepower from one-fifth of a pound of coal. The highest attainment they ever get is a horsepower from a pound. That is a very high ideal. If you find people are using either eight or nine or ten pounds of coal per horsepower, it measures a certain amount of inefficiency compared to the practically attainable. That is an illustration. The fuel is the largest single item of expense, so a large amount of this saving might be from the fuel. That is the second way of determining this waste. The third was the comparative methods. All railroads are efficient in certain directions. They are tremendously efficient in certain directions. Each railroad has some particular spot in which it is more fortunate perhaps than other railroads. Taking the different railroads of the country and visiting them and investigating them, and finding out that one had an efficient way as to maintenance of locomotives, another as to maintenance of cars, that a third had an efficient way as to maintenance of shop machinery and tools, and the fourth had an efficiency as to maintenance of track; and taking all these different bright spots that the railroads had evolved through the special genius of the men connected with or interested in those particular departments, you got a third standard — a standard, for instance, let us say, of six cents a mile as being an adequate amount on the average to maintain locomotives, or a standard of \$35 as being an adequate standard to maintain cars.

Mr. BRANDEIS. Freight cars?

Mr. EMERSON. Freight cars. Some months ago, when I was addressing the Railway Club in Pittsburg, I stated this standard of \$35 per car. Mr. Turner of the P. & L. E. was the spokesman of the opposition. He said they had been long waiting to get a chance at me, and the chance had now come; that they were tired of assertions of this kind being made, that they were from Missouri and the

time had come for a show down. He said: "Mr. Emerson states \$37 a car. I want to know where he gets his facts and what right he has to get up any standard of that kind." I told them about a number of roads that had attained that, and the next day I went around to see Mr. Turner. I said, "Turner, what does it cost you to maintain your freight cars?"

He said, "I do not know. I never figured it out that way. I have always figured it by the mile and not by the freight car." I said, "Can you find out very easily what it is?" He said, "Yes." So in the course of half an hour his chief clerk brought in the figures, showing their cost of maintenance per car was \$31.01. (Laughter). I very much regretted that I had not known that fact at the time they had me on the stand before the Club.

In the same way as to maintenance of locomotives. I think the records of the Pittsburg and Lake Erie are probably among the model records of the United States. In checking them up I found Mr. Turner had accomplished the maintenance of his locomotives, that are heavy power, for somewhere between \$1200 and \$1500, one of the lowest records I know of in the United States.

That is the third way of ascertaining standards. That means you can apply haphazard that standard to any road. It means it gives you a general average on which you can base a conclusion. That method checked up with the other two methods in revealing losses aggregating not less than \$300,000,000.

The fourth method was in particular. In connection with the work of the Sante Fé we made an investigation or scientific investigation, of which you have heard from the other gentlemen on the same system. I took the costs as they were. I finally found out why those costs were, what losses were occurring, and what could be done by the management to eliminate those losses. We set up as a standard of measurement, because you have to have some unit or measurement, what has since been called the road unit. The road unit is a combination of the locomotive mileage with its weight on driver. If you take the locomotive alone, it may stand in the roundhouse for a whole year and would have no repairs. If you take the mileage alone, it might be a light locomotive running a number of miles, and that would not be a fair measurement; but when you combine the mileage the locomotive makes in the course of a year with its weight, you have a unit that at least in some respects is better than the unit of either the single locomotive or the locomotive miles.

Using that unit, we found in the fiscal year ending 1904 the cost of locomotives had been \$101 per road unit as an average on the whole system. By investigating the matter and inducing the management to put in various scientific studies, that was reduced in the next year to \$78, and in the third year to \$74. At that time I presented to Mr. Kendrick an exhaustive study of locomotive operation, covering eighteen hundred locomotives and all their records for five years, as to all the different divisions and the different causes and the different items of expense. It was probably one of the most complete statements of locomotive operation that was ever made. I did not make it myself. It was made for me by one of my assistants, and with the assistance particularly of the statistical department. He could not have done anything if he had not had access to the vast accumulation of statistics that had been collected for use by that department.

Mr. BRANDEIS. You mean the statistical department of the Santa Fé?

Mr. EMERSON. Yes, the statistical department of the Santa Fé. I stated at that time, in final report, that I saw no reason why the Santa Fé should not be able to maintain its locomotives for fifty dollars per road unit. That was thirty-three per cent lower than they had attained at that time. I am still of that opinion.

That was the fourth method. The same system was applied to other items of locomotive work. Taking up those four methods, they all of them gave me substantially the same result, within \$30,000,000 or \$40,000,000 of each other."

(c) EMERSON (Record, pp. 3563-3564).

"Mr. BRANDEIS. Then your estimate as to the absence of efficiency and of the possible saving is based upon the assumption and belief and deduction that in the very large part of the service this high efficiency attained in the Chicago-New York trains is absent?

Mr. EMERSON. That is correct. I have studied the comparative records of the leading railroads of the United States and tested them by the unit standard cost. I have been in the shops of a great number of different railroads, my assistants have been in the shops of nearly all of the important railroads of the United States, either visiting them or working in them, so I have a very fair knowledge as to the extent in the past. At the present moment I do not know, but

up to the last year I know what the condition was in the various railroad shops of the country.

If I find that the unit cost of performance is high on a railroad, I conclude that one of two things is true: either that they do not have the methods of scientific management, or that there is an undue number of dependent sequences. It is due absolutely to one of those two things."

24. *The Commission should Undertake an Independent Investigation into the Application of Scientific Management to Railroads.*

We respectfully submit that in no event ought the Commission to approve the proposed increase in class rates without making an independent investigation into the possibilities of applying scientific management to railroads. We believe that the evidence already adduced will convince the Commission that such application is possible, and that it would result in the huge economy indicated. But, even if the evidence does not carry to the Commission that full conviction, it certainly is sufficient to create a reasonable ground to believe—particularly in the absence of any evidence from the railroads to the contrary—that the introduction of scientific management in railroads is possible, and that its introduction would be attended by great savings. If there is reasonable ground to believe this, the railroads have failed to sustain their burden of proof, that they need increased rates.

TOWNE (Record, pp. 3303-3305).

"In answer to the latter part of your question I would say this: That I am not here as an opponent of the railroads. I am not here to oppose the proposed increase of freight rates. I do not know whether the railroads should have it or not. If they are entitled to it, they ought to have it. But I see this fact, as a manufacturer; that

whereas, in other industries, when we are confronted by too close an approximation of our income to our expenditure, competitive conditions rarely if ever permit us to open the interval to the point which will cover a fair profit by putting our prices up. Our competitors will not permit of our doing that. We have to meet the competition, and therefore we are compelled to look within for the remedy, — not to pass the burden on to others, but to face it ourselves, and find some way of relief. We have done it — I am not speaking of my own case only, but of manufacturers generally — we have done it again and again, successfully, on a great scale in hundreds of thousands of cases; and it is one of the many illustrations of what is commonly understood as a blessing in disguise.

Under the stress of necessity, we have learned how to do things better and more efficiently, more economically than ever before, and thereby have made our plants and our capital more productive than they otherwise would have been.

Speaking from that experience, and from my general knowledge of such matters, not as an expert railroad man, I venture the opinion, and with confidence, that if the railroads will apply these modern methods of intensified management, scientifically planned and efficiently carried out, they will thereby affect economies that will aggregate many times in money value to them the benefit they would obtain from the proposed increase in the freight rates."

But aside from this failure of the railroads to maintain their burden of proof, we submit that the Commission ought, before allowing any increase of class rates, to fully investigate the subject of scientific management on its own behalf. Such a course is in any event desirable because much valuable evidence would be available to the Commission which is not available to us. This is particularly true because there are witnesses directly or indirectly connected with railroads particularly competent to testify on the subject, whose appearance at our instance would have been treated as an act of hostility to the railroads with whom they are affiliated or on whom, in large measure, they are dependent. An investigation undertaken by the Commission would secure this testimony and would also afford

the opportunity of full inquiry into the existing practices in railroad operation, and among other things, into certain experience in scientific management made by one of the railroads which has not presented any evidence on this subject, and as to which we were not in a position to make any disclosure to the Commission without breach of confidence.

PART THIRD

THE RAILROADS' CONTENTION THAT THE PROPOSED INCREASES IN CLASS RATES ARE JUST AND REASONABLE

The greater part of the present class rates have been in effect as published rates since the adoption of the official classification in 1887 and many of them for thirty years.

Until the abolition (between 1901 and 1906) of the practice of rebating on the several railroads, these published class rates were in fact largely reduced by rebates, reducing the published rate at times by a discount of as much as 50 or 60 per cent and averaging on the staple commodities perhaps 30 per cent. Many articles covered by class tariffs have been raised by reclassification since 1901; for instance, cotton goods.

LAWRENCE (Record, pp. 4799-4780).

"During the past eleven years, taking it from 1899, the freight rates have advanced about 37 per cent plus what rebates were given. I am not aware of what the rebates were, and it is a matter that has not been particularly interesting to me; but we all know there was a rebate in those days, and that the withdrawal of the rebates was practically at once. The increase was 37 per cent, on the published rates. If the new increase, as suggested, goes into effect, it will make 73 per cent advance in the last twelve years.

Commissioner PROUTY. To what points?

Mr. LAWRENCE. I am taking as the basis of this the rate to Chicago, and I think that is a fair criterion.

In taking these figures, I have used the differential lake and rail, for the reason that 75 per cent of our merchandise goes west over the differential lines in this territory.

That leads me to say that the actual advance figures 25 per cent over this differential lake and rail route, where, as I said, 75 per cent of our goods is used."

It would probably be found that the average actual rates on all the principal articles shipped under class rates in 1910 were at least 30 per cent higher than in 1888.

On the other hand, the average rate of freight per ton per mile received in the United States has diminished 24 per cent since 1888.

On the Pennsylvania Railroad the average freight rate per ton per mile has been as follows:

1887: .0073.

1909: .0058.

1. *The Railroads have Presented no Evidence to Sustain their Burden of Proof that the Proposed Increased Rates are Just and Reasonable*

Even before the Act of June 18, 1910, amending the Act to Regulate Commerce, it was well settled that the voluntary act of the carriers in keeping a rate in effect for a long period creates a presumption against them that the rate is reasonable. As the railroads voluntarily fixed the rates on standard all-rail class traffic nearly a generation ago and have since made no changes in them except through changes in classification, the railroads would, even before the Act of June 18, 1910, have had to bear the burden of establishing that the proposed increase was just and reasonable. But the recent act has defined clearly the burden resting upon the railroads. It has converted a mere presumption of fact into a rule of law.

(a) The only evidence introduced by the railroads to sustain this burden of proof relates to the railroads' needs.

DALY (Record, pp. 1035-1037).

"Mr. JAMES. I understood you to say in your examination in chief, in answer to Mr. Brown, that you had conferred about these

matters, and you had discussed all the details of these matters. That is right, is it not? Did you say that to Mr. Brown?

Mr. DALY. Discussed it with whom?

Mr. JAMES. With anybody?

Mr. DALY. What matters?

Mr. JAMES. The matters of the advance of these rates?

Mr. DALY. We discussed the necessity for the advance of the rates.

Mr. JAMES. Did you discuss also the advisability and the wisdom of the advance?

Mr. DALY. Among ourselves.

Mr. JAMES. You did?

Mr. DALY. I did.

Mr. JAMES. You discussed it with reference to each class, did you not?

Mr. DALY. No, sir; I did not.

Mr. JAMES. Did you discuss it as to each commodity?

Mr. DALY. I did not.

Mr. JAMES. How can you determine the wisdom of the advance as to the particular commodity or as to the particular class without discussing and conferring upon it?

Mr. DALY. It was not necessary for our purpose. We discussed the fact that we needed the money.

Mr. JAMES. The mere fact that you needed the money?

Mr. DALY. Then the detail of it was to be discussed and disposed of by the men having that part of the work in charge.

Mr. JAMES. Did they do it, to your knowledge?

Mr. DALY. They certainly did; that is, they discussed the classes.

Mr. JAMES. Do you know whether you or any of your subordinates took up each article and each class in order to determine commercially as to whether it would stand the advance?

Mr. DALY. We did not."

(b) All other evidence consists substantially of the affirmation by certain traffic officials that the proposed rates are just and reasonable; an affirmation which adds nothing to what is implied from the mere filing of the tariff.

DALY (Record, pp. 1145-1147).

"Mr. DALY. The lake and rail rate was so sufficiently low, in our opinion, that the service justified that advance?

Mr. BRANDEIS. Why do you say it was low?

Mr. DALY. Because it was.

Mr. BRANDEIS. On what do you base that statement?

Mr. DALY. The figures, a 62 cent rate, as compared with the 75.

Mr. BRANDEIS. Well, that mere statement, to say that a thing is low or that it is n't low, is nothing that carries conviction, I submit.

Mr. DALY. Possibly not.

Mr. BRANDEIS. One must have a reason why he says it is low, and I want to get, so far as you are able to furnish it, the reason why you say that that is low.

Mr. DALY. In my judgment, Mr. Brandeis, the rate of 62 cents, lake and rail, as compared with the 75 cent all-rail, was too low.

Mr. BRANDEIS. For what?

Mr. DALY. Because the difference in the service does not justify the difference in rates.

Mr. BRANDEIS. Now, will you explain that, not by reiteration, but by giving the reasons, because I do not think we have progressed any.

Mr. DALY. Well, I am afraid I could n't give you any more definite reason than that, in my judgment, based on experience, that is true. Now, if that is n't satisfactory —

Mr. BRANDEIS. Will you tell us what elements — I mean what facts — you say your experience. Now, I am not going into the question as to how long you have had any experience, but I want to know the facts on which you rely for making that distinction between the increase in the all-rail and the increase in the lake and rail.

Mr. DALY. The best of my judgment, sir.

Mr. BRANDEIS. I know, — the best of your judgment, Mr. Daly. That may satisfy you, but I think others would want to know on what you base your judgment.

Mr. DALY. I am afraid you will have to accept that.

Mr. BRANDEIS. Now, there must be some elements, aside from the innate conviction in your own mind that a thing is low or high. You might as well have told us that your judgment is that that rate, instead of being 77, ought to be 82. I mean assuming it was. You would n't tell us, unless it was.

Mr. DALY. If I had, it would be based exactly on the same reasons.

Mr. BRANDEIS. Yes, but, if you have a judgment on which the Commission, or at least others who are endeavoring to learn from you, are expected to rely, I think they might reasonably ask that the basis of your judgment, if you are able to express it in words, should be stated.

Mr. DALY. The basis of my judgment is exactly the same as the basis of a man who knows how to play a good game of golf. It comes from practice, contact and experience with the particular subject at issue.

Mr. BRANDEIS. I don't care to spend time; but I want to know, Mr. Daly, just as clearly as you can state it, whether you can give a single reason, based on anything more than your arbitrary judgment as you have expressed it?

Mr. DALY. None whatever.

Mr. BRANDEIS. None whatever?

Mr. DALY. None whatever."

(c) The new tariffs appear to have been agreed upon by the Railroads without any consideration of the cost of the service or whether or not existing rates were compensatory.

DALY (Record, pp. 1156-1159).

"Mr. BRANDEIS. But I ask you, as one high in the councils and duties of the New York Central lines, whether it is not essential, in determining what is a proper rate and a proper relation, or at least one of the elements of fixing a proper rate between distant points, that there should be devolved at least in the mind of the rate maker some definite relation and some definite idea of the cost and of what figure will be compensatory in such a service as the terminal service.

Mr. DALY. We take into consideration the operating expenses and the revenue that we derive from the traffic,

Mr. BRANDEIS. I had no doubt you do, but what I want to do, thinking that I may perhaps in some way be able to aid the Commission in the very arduous labors which they have, is to ascertain by inquiry from you what the elements are which justify you in making a definite statement. Now I do not want to appear to be unduly persistent —

Mr. DALY. I am perfectly willing; I am glad to have you.

Mr. BRANDEIS. But I want you to realize the position which I think the Commission must be in, and it is this. Up to the present law, up to this present time, the railroads, in the exercise of their judgment and without giving account to any tribunal or person, have undertaken to fix, from time to time, say, increases in rates. Now, I understand that the old situation in that respect has been changed by the new law; that now the railroads must go before the Interstate Commerce Commission not with a statement "we think this rate is reasonable and should be raised," because the filing of the tariff is the wholesale declaration of that fact, and nothing is added to it by the statement of the high officer of the railroad on the stand, or off, that "we think that is the proper rate," the filing of the tariff is in effect a declaration of that very thing, because we assume that the railroads are candid and frank and honest in that statement that they think it is proper; but I submit when the Commission undertakes to consider that proposed increase it has absolutely nothing before it and unless some reason — I mean reason in fact, some definite thing, some definite facts are called to the attention of the Commission, they are absolutely without evidence on which to find that any given rate increase is reasonable.

Mr. DALY. Mr. Brandeis, with the greatest respect, I want to say that in my judgment the common sense of the members of the Interstate Commerce Commission is all that is necessary to satisfy them that there is a very material increased cost in the handling of l. c. l. freight as compared with carload freight.

Mr. BRANDEIS. Now that is not the question that I am asking you.

Mr. DALY. Certainly not.

Mr. BRANDEIS. I assume, and I assume you have made very great differences in your tariff between l. c. l. freight and carload freight. That we assume, but the question that I want to get at, and I want to tell you my difficulties so you may remove them so far as it is in your power to do so, my difficulty is in learning the reasons.

Mr. DALY. I might make it clear, to save time, if I would say to you very frankly we have never undertaken to segregate those costs.

Mr. BRANDEIS. You have not?

Mr. DALY. That is clear, I guess.

Mr. BRANDEIS. You have never undertaken to segregate the costs of the terminal and of the other service?"

(d) The new tariff appears to have been agreed upon without any consideration of their effect upon the industries to which they applied.

DALY (Record, pp. 1174-1177).

"Mr. DALY. You know Rome was n't built in a day.

Mr. BRANDEIS. But I think, Mr. Daly, you are undertaking to boost all these rates in a day.

Mr. DALY. No.

Mr. BRANDEIS. And that is just what we object to.

Mr. DALY. No; it has taken us a good many days.

Mr. BRANDEIS. What we say is that these rates — and I want you to understand our position and see that it is not unreasonable — what we say is that for a lifetime, that is, a generation of business men, these rates have prevailed, and to these rates business has accommodated itself, and that no increase should be made in any of those rates without an adequate consideration of the effect of that increase; that for a business man, that for a manufacturer of shoes or a manufacturer of cotton goods, or the manufacturer of woolen goods, any of these questions, it is just as important that his rate should not be unduly raised, as if he did not have a thousand or two thousand associates in the same position.

Mr. DALY. We contend that it has not been unduly raised.

Mr. BRANDEIS. What we say is, where can you show that you have exercised, in regard to each individual rate, I mean, each individual article —

Mr. DALY. We have not professed to.

Mr. BRANDEIS. That same judgment, conference, that you exercised when you dealt with the makers of steel or the makers of cement.

Mr. DALY. Impossible, Mr. Brandeis. There are hundreds of articles in each class.

Mr. BRANDEIS. It has not been impossible, Mr. Daly, during the last thirty years.

Mr. DALY. Yes, it has; it has been impossible. Just simply the classes as established there have been a block proposition.

Mr. BRANDEIS. If it is impossible —

Mr. DALY. Now, it is a period that has gone by.

Mr. BRANDEIS. If it has been impossible to consider the effect upon existing industries, would it not be more reasonable to leave

unchanged the burden on those industries and deal with those other articles of commerce as to which it is possible to make an investigation, and in connection with which you can exercise a trained and experienced judgment?

Mr. DALY. Well, from the best of our knowledge and belief, based on, as I repeat again, great experience, and others who have had a great deal more than myself, we do not feel that the rate which it is proposed to inaugurate in the classes is unduly high, or that it will have any serious effect on any of the manufacturers.

Mr. BRANDEIS. Well, now, Mr. Daly, we have absolute respect for the integrity of your feelings.

Mr. DALY. Sure.

Mr. BRANDEIS. But what we need is not feelings, but thoughts in dealing with the affairs of business, and when the shippers of the seaboard come here and protest against a raise of rates, which, so far as their individual case is concerned, have not been considered in conference, at least, with them, they say that the act is an arbitrary act, however well intentioned it may have been.

Mr. DALY. But, Mr. —

Mr. BRANDEIS. Now, that is the position, and I want to have you understand it and answer it.

Mr. DALY. Yes; I will.

Mr. BRANDEIS. If you are able to do so.

Mr. DALY. Yes, sir. Now, I have stated to you that our action was based on our judgment.

Mr. BRANDEIS. Yes.

Mr. DALY. We have stated why and what we did. Now, you say that this will have a terrible effect on the business of your clients. We have n't anything from you or from your clients, except your statement, which is not in our judgment worth any more than mine, and in this particular instance I don't think it is worth as much.

Mr. BRANDEIS. I am not undertaking, Mr. Daly, to set up my statement. Fortunately, counsel have only to present the evidence of others."

(e) The Railroads have, in agreeing upon the new tariffs and in presenting their case before the Commission, ignored the fact that the burden rests upon them to show that the increased rate is just and reasonable.

DALY (Record, pp. 1178-1179).

"Mr. DALY. Present your evidence. If you show we have ruined your business, then we will admit that our judgment is wrong.

Mr. BRANDEIS. What I want, of course, is an understanding on this question. You understand, of course, that under this new law the burden —

Mr. DALY. I understand it thoroughly.

Mr. BRANDEIS. Rests upon you.

Mr. DALY. Yes, sir.

Mr. BRANDEIS. To show that the change you purpose making is reasonable.

Mr. DALY. Yes, sir.

Mr. BRANDEIS. And you have yourself stated that one of the elements of reasonableness is its effect upon the trade with which it deals, or, to express it as Mr. Thayer did, whether the raise will impair the free flow of that commodity in transportation.

Mr. DALY. Well, in order for you to disprove my statement you must show to the Commission that what we have done has injured your industry.

Mr. BRANDEIS. I submit that there is no such obligation resting upon me or upon my clients, because you have not shown anything except an arbitrary statement in wholesale —

Mr. DALY. I am perfectly willing to leave that —

Mr. BRANDEIS. Of some 10,000, perhaps 100,000 of articles —

Mr. DALY. Perfectly willing to leave that in the hands of the Commission, with what we have furnished.

Mr. BRANDEIS. Then you do not purpose, as representing the New York Central Lines, to introduce any evidence whatsoever as to the effect of these rates upon any of the articles of commerce included within them?

Mr. DALY. I will have to refer you to my counsel as to what evidence they are going to introduce."

(f) That the new tariffs are in some respects *not* just and reasonable is admitted.

DALY (Record, p. 1039).

"I am not here professing to state that this proposed schedule of rates which we desire effective with the approval of the Commission is perfect. No schedule of rates ever produced, filed, or in operation,

was ever 100 per cent perfect. That is shown from the fact that they are continually being adjusted up and down and in and out to meet the commercial conditions which they affect. Now, we do not profess that this scale is perfect; but we contend that we will make it perfect just as rapidly as it is possible to be made perfect as soon as there are any inequalities or inconsistencies brought to our attention."

2. *No Increase of any Class Rate can properly be Made without Giving the Shippers an Opportunity to be Heard*

It seems obvious that no increase in rate should ever be made without giving the representatives of the shippers an opportunity to advise as to effect of the proposed change. This is demanded alike by fairness and by prudence. A change in rates may not only destroy the business of the shippers; it may also cut off important revenue of the carrier. And the officials of the railroads necessarily lack that special knowledge of all businesses which is essential to a proper determination of the justice and wisdom of proposed changes.

(a) IVES (Record, pp. 4472).

"Mr. BRANDEIS. What should be the method of procedure on the part of the railroads with respect to the shipping community, before any increase was made?

Mr. IVES. If I am the judge, I should say they should take these matters up and confer with the shippers themselves or their representatives."

(b) LAWRENCE (Record, pp. 4785-4786).

"Mr. BRANDEIS. You stated that you thought the question of a change in rate ought to be the subject of discussion and consideration between the two parties interested or immediately interested, the railroad and the manufacturer? Has there been such consideration between you and the railroads, or between your trade and the railroads, before this rate was decided upon?

Mr. LAWRENCE. That is a point I meant to bring out. About a year ago this matter was suggested by the New Haven Railroad, and one of the officials came to see me and said, "We want to get more money. Can't we get more from your merchandise moving to New York?" I explained the situation and how it would affect us, and he said, "I see perfectly we cannot get more money from you, although we have lowered your rates on these matters in the last three years." They then proceeded to procure it in other ways. They put some of it on passengers that had been getting extremely low rates.

Mr. BRANDEIS. Was there any such consideration in respect to these tariffs as they now affect the situation?

Mr. LAWRENCE. No. The first time I knew of it was my going down and asking them to talk it over, and the result was, "Come to the Interstate Commerce Commission and tell them what you have to say."

Mr. BRANDEIS. Then this interview which you had with them, when you asked them to talk it over, was after the rates had been settled upon?

This has been the established practice of the Official Classification Committee. It has been also the general practice of railroads with reference to increases in commodity rates.

IVES (Record, pp. 4454, 4455).

Mr. BRANDEIS. In those changes which were made in Official Classification territory, what was done with respect to consultation with the shippers and advising with the shippers and giving them an opportunity to be heard before a change was made?

Mr. IVES. The practice was to advise them by a printed docket of any proposed change. These changes might be proposed by a shipper or by a carrier or by an individual or group of individuals, or by a community. They were always listed, and periodically those lists were published and sent out throughout the territory. They were given as broad a distribution as was practicable. A small charge was made for them, so that only those who were anxious enough to get them to pay a small amount for them would get them.

Mr. FISHER. How long a period was allowed, ordinarily, between the notification of the intention to consider a change in the classification and the time when it was actually acted upon?

Mr. IVES. We published the classification twice a year and we published the dockets, as I recall it now — and these gentlemen here can correct me if I am wrong — I think just two and a half months before the proposed date of the classification, and we had the meeting between those two dates.

Mr. BRANDEIS. There was, at all events, an appreciable and apparently an ample period for the consideration of the effect of the change in the classification proposed?

Mr. IVES. Yes; a maximum amount of time was given, consistent with not causing too great a delay in putting it into effect."

3. The Pending Increases in Class Rates were Fixed by the Railroads without Giving to Shippers an Opportunity to be Heard

Neither the manufacturers, the merchants, nor the consumers of the Atlantic Seaboard, who were so vitally affected by the proposed increase of class rates, were given an opportunity to be heard on the proposed radical changes, although most of the existing class rates had been in force nearly a generation.

(a) IVES (Record, pp. 4472-4473).

"Mr. BRANDEIS. What, if any, consultation and discussion was there between the railroads and the shippers' organizations before this tariff was settled, the one that is now proposed and under consideration?

Mr. IVES. As far as I know in our territory no effort was made to obtain the views of any of the shippers prior to the time when the rates and the adjustments were finally and positively agreed on by the railroads."

(b) Infant Foods and Drugs. BENKHART (Record, p. 4825).

"Mr. BRANDEIS. Were you consulted by the railroad companies, or any of them, as to the effect which these proposed increases would have upon your business?"

Mr. BENKHART. No.

(c) Confectionery. Mr. FOBES (Record, p. 4843).

Mr. BRANDEIS. Were you consulted by the railroads as to the effect which this proposed increase would have on your business?

Mr. FOBES. No, sir.

Mr. BRANDEIS. Do you know whether any other confectionery manufacturers or chocolate manufacturers were consulted?

Mr. FOBES. I have not heard of any.

(d) Brass. MILLER (Record, p. 1731).

Mr. BRANDEIS. Were you consulted by the railroads as to the effect that this proposed increase would have upon your business?

Mr. MILLER. No, sir.

Mr. BRANDEIS. Do you know whether any of the other manufacturers in your line, similarly situated, were consulted by the railroads before they asked for this advance?

Mr. MILLER. No, sir; not to my knowledge.

Mr. BRANDEIS. As to the effect this would have on their business?

Mr. MILLER. Not to my knowledge."

4. *The Injustice and Inequality in the Existing Classifications are such that no Horizontal Rise in Rates could be Made without Great Hardship to the Shippers in Communities Affected*

The facts in this respect have been clearly set forth by Mr. D. O. Ives, formerly Chairman of the Official Classification Committee.

(a) IVES (Record, p. 4452).

"While I was traffic manager of the Wabash, in common with other Western railway men and men in the railroad business west of Buffalo and Pittsburg, I was anxious to increase the class rates from seaboard territory to our territory in Illinois and the West, because I wanted to make the spread larger between the rates from New York, Boston, Philadelphia, and Baltimore, and the rates from Buffalo, Detroit, Toledo, and our own shipping points as great as I could, in our own selfish interest. When I came to the Classification Committee I was called upon to look at the matter more judicially and more carefully. I changed my view entirely, and made up my

mind that until the classification could be completely revised, it would not be fair, just, or feasible, to make any general advance in class rates throughout the territory."

(b) IVES (Record, p. 4465).

"Now I maintain therefore that with such glaring inconsistencies — and that is only one of hundreds that I could show — it is not fair or defensible to make a blanket increase in the class rates, nor is it in accordance with the law as I understand it, which specifically states that each rate to which objection is made must be proved to be, by the carriers, just and reasonable."

(c) LAWRENCE (Record, pp. 4782-4783).

"I believe that a re-classification, especially in our line of business, is most necessary. It is inconceivable to me that in the last fifteen-odd years, with all the changes that have come about through this country, and changes affecting our business and other businesses, the using of rebates as a method of adjustment — they have now been withdrawn — that a classification and rearrangement could not be made with profit. There are certain goods that have a monopoly of location to-day. It makes every difference as to the rate that those merchants can carry. I believe other grades of goods compete with theirs in the country, and they should profitably carry lower rates. It should require, in my opinion, a thorough reorganization of the whole fabric of classification, and I believe it can be done by sitting down and working it out, if you have got to do it.

I believe that the railroads and the public have exactly the same common interests. The railroads want to keep the tonnage moving, and the shippers want to keep the tonnage moving also."

The injustice and inequality resulting from the present official classification are greatly increased in that part of the territory (for instance, Illinois) in which the Western classification overlaps the official classification.

IVES (Record, pp. 4455-4465).

"Mr. BRANDEIS. Were there any other matters you considered in connection with the proposed increases? I refer specifically to the different raises in the different classifications?"

Mr. IVES. There are, throughout the United States, three general classifications called "Official," "Western," and "Southern." These are not only each imperfect in itself, but each differs from each of the others in such a way as to make it almost hopeless to make comparisons.

Mr. BRANDEIS. What is the reason why comparison should be made between them?

Mr. IVES. Because the territories overlap, so that shippers from New York and Philadelphia on the one hand, and Chicago and St. Louis on the other, in competing with one another in Illinois, use two different classifications.

Mr. BRANDEIS. Does that apply only to Eastern communities and seaboard communities, or would it apply equally to any other?

Mr. IVES. It would apply to any shipper in Official Classification Territory doing business in Illinois or Wisconsin or along the Mississippi River or in St. Louis or beyond, effected by rates to the Mississippi River.

Mr. BRANDEIS. How great is the divergence or difference between these different classifications covering the same territory?

Mr. IVES. It is so great that it was generally admitted by the railroads that it required some unification, and over two years ago we appointed a so-called uniform classification committee. There was first a preliminary committee constituted to consider the feasibility of a uniform classification. I was a member of that committee, and we reported that we thought a permanent committee should be appointed to work upon this proposition and make rules and descriptions exactly uniform. That committee has been working for two years upon that proposition and I have been advised and understand that it is undoubtedly true that they have no permission to work upon the proposition, of unifying and numbering the classes, and until they have done that I consider that their work is merely expert and useful only as expert work. If the various classifications had been taken hold of by them, there would be absolutely no use in making a uniform classification unless they got permission to unify the numbering.

Now, in the Official Classification there are eight classes, six numbered and two intermediate classes, based on percentage with the class above them. In the Western Classification there are five, numbered one, two, three, four, five and A, B, C, D, and E. In the Southern Classification there are one, two, three, four, five, and the

sixth class, and then lettered classes based on an entirely different method of classification from that in the Western and Official. Those I will not go into.

Mr. BRANDEIS. What would be the practical effect in dealing with any particular article of commerce, as to the effect of these varying classifications, say in the Illinois territory?

Mr. IVES. In any particular commodity or in any particular article of commerce, you could investigate that particular article of commerce and find out exactly what the rate was from the Seaboard territory into this common neutral fighting ground of Illinois.

Mr. BRANDEIS. When you have found it out, would it be very different; would there be any great difference when you had deciphered it?

Mr. IVES. In a large number of cases it might! I made a small, a hasty comparison yesterday of some articles that I think are rather striking, giving the differences between the Western Classification and the Official Classification, on certain articles. . . .

Then I found that coffee, both green and roasted, in less-than-carload quantities; sugar, canned fruits and vegetables in less-than-carload, which take lower ratings in Western than in Official Classification, are all very important and very largely shipped. On vehicles the methods of making the classification were so different that it is impossible to make an intelligent comparison except by an expert. I recall that while we were on this classification committee, our committee of which I was a member, made a comparison between vehicles. After it was made, it practically was no comparison that could be used — the descriptions were so utterly different that when you put them beside one another, and then the ratings of different letters and figures together, they could not be compared and you had nothing but the two statements that could not be intelligently compared or from which any deductions could be made.

The same condition applies as to furniture.

We had a similar comparison made of furniture, and I found yesterday in looking over this that "chairs, not otherwise specified, set up, second class, minimum of 10,000," was the way it appeared in Official Classification. I think even that is one of the reductions. That is my recollection, although I am not sure. I may be mistaken.

In Western Classification chairs are fourth class with a minimum

of 12,000 pounds. There is also in the Western Classification a provision for certain kinds of furniture, which, while it may take a minute or two to read, I think I will read, because we had a great deal of trouble with it when I was chairman of the Official Classification Committee; and I think it illustrates as well as anything could the absolute absurdity and impossibility of trying to make any comparison of class rates in themselves without picking out each individual item and making the comparison between that item from the Official Classification territory into this neutral zone, and from the Western Classification. I will read it. (Reading.)

"Bank, Store, Saloon and Office Furniture, consisting of

"Arm Rails, Back Bar Mirrors, Bottle Cases, Chairs, Counters, Counter Fittings, Desks, Foot Rails, Metal Brackets for Arm and Foot Rails; Refrigerators, Tables and Work Boards . . . 3. Min. wt. 12,000 lbs. Subject to Rule 6-B.

"Note. Door, Window and Bar Screens, Partitions, Prescription Cases, Patent Medicine Cases, Show Cases, Wall Cases, Wainscoting, Office Railing and Wooden Mantels may be shipped with Bank, Store, Saloon or Office Furniture in mixed C. L., at 3rd class, min. wt. 12,000 lbs."

There is nothing of that kind in the Official Classification. I believe there is not in the Southern, but I am not sure. However, we are comparing Western and Official Classification. There is no such provision as that in the Official Classification. On the contrary a shipment of that kind can only be picked out by figuring the rate on the separate items. Some of them take as high a rating as three times first class. Show Cases, set up, would be included in that category and take three times first class. In Official Classification, if a man is competing with a man in neutral territory he has to pay three times the first class rate. . . .

That illustrates not only the difficulty of comparison, but it illustrates also the viciousness of the old ways of making classifications in which I bore my full share of the fault — perhaps more than my share — because that was undoubtedly done to help one large shipper. That rating was made in my opinion to enable one very large concern to do business and drive everybody else out. That was worked through the classifications probably for that purpose. I am now giving my opinion, perhaps as an expert, rather than speaking from absolute knowledge; but I cannot say positively that that was the animus in each man's mind when that was done; but that

was the result. That firm practically has a monopoly in that line of business throughout that territory, and it is now proposed to advance the rate on the man who is shipping — to put an extreme case — the show case set up at three times first class, or \$2.25 from New York to Danville, Ill., 20 per cent, making it \$2.70. Whereas the third class rate from Chicago down there, if it were raised — my recollection is it is about 20 cents a hundred, and if it were raised 20 per cent it would be raised 4 cents. As it happens, it is not going to be raised at all."

5. *The Proposed Increase in Class Rates seriously Distorts (on some Railroads) the Relation of Long Distance to Short Distance Traffic*

On the Pennsylvania, and the Baltimore and Ohio, for instance, the increase in rates does not apply to rates within about two hundred and fifty miles of the seaboard.

On still other railroads shorter rates remain unchanged because of the operation or influence of State laws.

Not a particle of evidence has been offered to show that such difference in treatment is just, although unsupported statements have been made to that effect.

Indeed in the absence of evidence (and apparently of knowledge) as to the cost of terminal service, a proper comparison of long distance to short distance rates is impossible.

The exclusion of short distance rates from the proposed increase appears to be due rather to the absolute refusal of President Baer to consent to the increase than to any exercise of judgment by others as to the fairness of the action.

(See Ives: Record, pp. 4497, 4498.)

6. *The Imposition of nearly the Whole Burden of the Increased Rates upon Class Rates Appears to be Unjust*

If any rate increase can be justified merely on the ground that the railroad companies need additional revenue, justice would seem to demand that the burden should be borne pro rata by all traffic, — by passenger as well as freight, by commodity as well as class traffic, by short distance as well as long distance traffic.

IVES (Record, p. 4470).

"Mr. BRANDEIS. Is there any special objection to the proposed horizontal increase by reason of the fact that it applies only to a portion of the traffic?"

Mr. IVES. It seems to me to be entirely unfair to attempt to get enough out of 15 per cent of the traffic in revenue to support over 100 per cent, especially when it is done not by an investigation and by picking out in accordance with the law, commodities which can stand it and which may be proved to be by the railroads just and reasonable. A blanket advance is made which cannot in the nature of things be investigated and about which nothing can be ascertained until the harm is done.

Mr. BRANDEIS. You used the word "commodity"; I suppose you meant article of commerce.

Mr. IVES. Article of commerce in the classification. I am not speaking of the commodity rate."

7. *The Proposed Increase of Class Rates would seriously Contract the Market of the Manufacturers and Merchants of the Atlantic Seaboard*

The proposed changes would in many instances compel the abandonment of markets now enjoyed.

(a) General Condition. IVES (Record, pp. 4467-4470).

"Mr. BRANDEIS. Now, something has been said about these horizontal increases disturbing the existing trade relations. How does that work out?"

Mr. IVES. Well, 20 per cent of 75 cents is naturally more than 20 per cent of thirty cents.

Mr. BRANDEIS. How do you apply it?

Mr. IVES. The result is that on any class in which the freight rate has anything to do with the sale of the goods, an advance of 20 per cent, without taking in consideration all the terminal expenses which the railway traffic officials while declining to express any view as to the exact figures stated were a very material part of the expense, distorts the relation, to my mind, entirely unreasonably of rates that have been in effect for a number of years. The shipper in figuring does not figure on percentage. The Philadelphia man in competing with the St. Louis man in Springfield, Illinois, does not compare the percentage of his rate. He compares the actual difference in cents per hundred weight. Now, if a percentage is to be used and such a wrench and dislocation is to be given to these rates as this 20 per cent and 25 per cent and 30 per cent advance means, at least a liberal allowance should have been made for these terminal expenses which railway men themselves, and justly, have said were a very large proportion of the rates.

I should like to illustrate the advance in rates that would actually take place by referring to the rate on cotton-piece goods. That was one of the articles which Mr. Tittmore had in his list, one of the articles in which an enormous amount of shipments takes place of the necessities of life for the poorest people in this country, common prints and calicoes and even dry goods; also cheap knit goods and so on. But take the cotton-piece goods. The rate in 1900 was advanced through the classification from 37 to 41 or 42 cents. It was raised again slightly two years ago, when there was an insurance adjustment, until finally that rate, through the increase in the classification and the increase in the rail and lake rate, becomes 46 cents instead of 37, which is 25 per cent increase.

It is now proposed to add 20 per cent to that which makes it about 56 and a total increase of practically 50 per cent, over 50 per cent, even after allowing for a slight difference due to the fact that the rate was an insured rate.

That is true of a very large number of articles. The re-classification has been advanced on a very much greater number of articles than those on which it has been reduced, beginning with this advance in 1900. There is no question about that, although I have not made a statement as Mr. Tittmore has and have not the exact

figures. I think the Commission themselves know, because they gave a hearing on the subject, and the commodities are so important when you take commodities like sugar, coffee, canned goods of all kinds, cotton-piece goods, and so on, on which this advance is made. And I think it is quite apparent that it is a very important and far-reaching advance.

Mr. BRANDEIS. Has there been any special advance of the lake and rail rates in this case?

Mr. IVES. Yes, sir; I just mentioned it. I applied it to the cotton-piece goods. It was on all the classes.

Mr. BRANDEIS. How much has that been?

Mr. IVES. 1st Class has been raised from 54 to 62 cents. 3d Class, as I recall — no, it is only commodities that take 3d Class, that were advanced from 37 to 46. They were advanced from 3d Class to Rule 25. 1st Class was advanced to 62 cents."

(b) Boots and Shoes. JONES (Record, pp. 4694-4700).

"The item of freight cost is a very important one in the shoe industry, for the reason that our merchandise has always been rated as first class. . . .

The industry which I represent is a New England industry and distributes its goods in large quantities throughout the whole country. Of course an increase in freight rates to the amount of 20 per cent in this territory which is under discussion would make a very serious addition to the expense of the business. The business is conducted largely on the fixed-price basis. That is, every retailer buys his shoes at a definite price. A shoe to be sold at \$3 retail is bought at \$2.85 in ninety-nine cases out of every hundred. A shoe to be sold at \$4 is bought at \$2.85. Consequently the purchase price and the selling price of the article are already fixed. It remains for the retailer to keep his expenses within that limit. And an increase of this amount in freight would make a very serious problem for the retailer in his effort to do that.

Mr. BRANDEIS. How would it effect the New England manufacturer's ability to sell in the Central West?

Mr. JONES. Why, it would do this: As fast as the Western retailer could obtain his goods in near-by territory where his rates were much less, he would drop Eastern goods for the cheaper rates.

Mr. BRANDEIS. You spoke of the difficulty incident to the proposed 20 per cent raise. As a matter of fact, is not the raise materi-

ally above 20 per cent; that is, between 20 to 30 per cent? As a matter of fact, are not the shoe shipments very largely lake and rail shipments or differential route shipments, in which the difference made by this 20 per cent rate brings it not 20 per cent but from 24 to 30 per cent, according to the different methods of shipment?

Mr. JONES. That is what I understand.

Mr. BRANDEIS. Does so small a difference as this per pair of shoes have the effect, or would it have the effect, of contracting the market and eliminating, pro tanto, the ability of the seacoast manufacturer to compete with the manufacturer, say, in Chicago and St. Louis?

Mr. JONES. It unquestionably would have such an effect in a very marked degree; very marked.

Mr. BRANDEIS. Has there during the last ten years been an increase in freight rates to that territory affecting among other things boots and shoes?

Mr. JONES. Yes, sir. We had an increase in the lake and rail rate in 1900. We had a most important increase in, I think it was, 1901 or 1902, when the differential of 10 cents which we enjoyed over very important routes and along which we sent four-fifths of all our products was cut from ten cents to five. We formerly got a 65-cent rate to Chicago by all differential routes. I think it was in 1902 that it was changed to a 5-cent differential, making the rate 70 cents to Chicago. That is on regular first class.

Then later on, in 1905 I think it was, there was another advance in the lake and rail of 5 cents more, and we have had in New England another form of advance that has been very unhappy in its effect on us: Those Western lines have frequently absorbed the rate from interior points to the station in Boston, or to the ship side, as it may be. Of late those privileges have been curtailed at many points. While we have factories in Maine, we are unable to ship those goods at Boston rates. We have to pay the local rate to Boston, which is 15 cents a hundred. That is not in regard to all points but to certain points, and it is a very unfortunate increase for us.

Mr. BRANDEIS. When you say "for us," do you mean individually as to your own business, or as to the business of the New England manufacturer?

Mr. JONES. Not my own business; but all New England manufacturers. My business is no different from the others.

Mr. BRANDEIS. When you speak of what is one effect of an in-

crease in freight rates, as limiting the possibilities of competition, do you speak from experience or merely as a prophet?

Mr. JONES. I speak from experience. We have seen in the last ten years a very strong development of the manufacturing industry in shoes in the West. Perhaps fifteen or twenty years ago New England had an unquestioned supremacy in the manufacture of shoes. To-day there are manufacturers equally successful in many important points in the West, and the growth of the shoe industry has taken place wholly in the West. I think New England has not grown in the last ten years in its production of shoes, but the enormous growth that has taken place has been taken care of in the West. There is no item that has come to my knowledge so important in that tendency or any more important in that tendency than the freight rates.

Mr. BRANDEIS. As a matter of fact, the question of freight rates, freight, has practically put an end to the great jobbing business in shoes that was formerly carried on in the East.

Mr. JONES. Entirely. There is no western jobber in the East that I have any knowledge of now, while twenty years ago there were twenty-three or thirty there. Every one has been put out of business.

Mr. BRANDEIS. Consequently this percentage figured, however small it may be, on the individual pair of shoes, is quite sufficient to determine the existence of a business and the ability to compete within a particular territory?

Mr. JONES. Why, it would have an unquestioned tendency to restrict our output. As the business in the West was developing and growing, they would buy Western goods and drop Eastern goods with such a difference in freight rates as would exist under the new change."

(c) Confectionery. FOBES (Record, pp. 4832-4834).

"Mr. BRANDEIS. How small or large is the profit on any large part of these goods in the competitive territory?

Mr. FOBES. On the bulk of the goods which are sold in competitive territory at prices from six to eight cents, the profit is not over one quarter of a cent a pound.

Mr. BRANDEIS. The increase of freight rate would be a material matter as bearing upon the conduct of your business in that territory?

Mr. FOBES. Nearly one half of the profit.

Mr. BRANDEIS. What, in your opinion, would be the effect of increasing the rates, as to curtailing the business, either eliminating a

portion of your territory, now occupied by you in part, or in reducing the sales within that territory?

Mr. FOBES. I think it would simply compel us to withdraw from that territory on that class of manufactures.

Mr. BRANDEIS. Would or would not, in your opinion, the raising of rates proposed give to the railroads gross revenue greater or smaller than that at present received from your class of goods?

Mr. FOBES. I believe it would give them a smaller revenue than at present.

Mr. BRANDEIS. You are referring, now, not only to your own concern, but to other concerns?

Mr. FOBES. Yes, sir.

Mr. BRANDEIS. Are there many other concerns, or a number of others, in our district similarly situated to yours?

Mr. FOBES. Quite a number in Boston, and in New York, and Philadelphia and Baltimore, there are also large manufacturers."

(d) Brass Products. MILLER (Record, pp. 4767-4771).

"Mr. BRANDEIS. Will you state to the Commission in what way, in your opinion, the proposed increases in rates will affect seriously the business of yourself and of others similarly situated on the Atlantic seaboard?

Mr. MILLER. The most serious part of our position is the restriction of the territory in which we can ship. The percentage of profit is so small on that class of material which I have spoken of, which we call raw material — sheet, rod, wire, and tubing — that we are now restricted to a very considerable extent, and we refuse business every day on the basis that the distance is too far or the freight rate is too great, and we only take business with the maximum freight rate when we have not enough other business to run our establishment at full capacity. The increasing of these freight rates will narrow very materially the limits of the shipments of our products.

Mr. BRANDEIS. How large, on that class of products to which you refer now, is the difference between the cost of the raw material to you and the selling prices at which you sell the brass sheeting, and so forth, made from that material?

Mr. MILLER. The cost of raw material is over eighty per cent. For instance, on sheet brass No. 1, the price to-day is thirteen or fourteen cents per pound, and the mixture cost is two and a half cents less than that; so that out of that two and a half cents the man-

ufacturer has to pay the freight and he has to pay the boxing and all his other overhead expenses and manufacturing expenses.

Mr. BRANDEIS. That is, all the manufacturing expenses and labor and the incidental expenses, the transportation expenses, and everything?

Mr. MILLER. Yes, sir.

Mr. BRANDEIS. They all have to be borne out of that two and one half cents?

Mr. MILLER. Yes, sir.

Mr. BRANDEIS. Of that two and one half cents, at the present time, what does the freight consume?

Mr. MILLER. We paid last year in freights forty-seven thousand dollars, which is an average of something over thirty cents per hundredweight on our products. That is simply on outgoing shipments. That does not include any freight on incoming shipments whatever.

Mr. BRANDEIS. That covers the freight over all territory, near as well as distant?

Mr. MILLER. Yes.

Mr. BRANDEIS. What is the freight on this outgoing product, this particularly affected territory — that is, west of Buffalo, Buffalo to Chicago and St. Louis territory? What is the freight rate per pound? How does it run per pound?

Mr. MILLER. The percentage of our business west of Pittsburg and Buffalo is in the neighborhood of 15 per cent.

Mr. BRANDEIS. What part of the two and one half cents would be taken up to pay the freight on that class of business?

Mr. MILLER. I do not know that I can tell you exactly what the average would be, but it would probably be in the neighborhood of four tenths of a cent per pound.

Mr. BRANDEIS. What would be the effect of this increase of twenty per cent — for it is a twenty per cent increase, is it not?

Mr. MILLER. Yes.

Mr. BRANDEIS. You sell in less than carload lots?

Mr. MILLER. All of our raw material is shipped under the third class, and our manufactured goods go first class.

Mr. BRANDEIS. You mean, by raw material, what? It is not really raw material?

Mr. MILLER. I mean sheet, rods, and wire.

Mr. BRANDEIS. You distinguish between the two classes of manufactured goods?

Mr. MILLER. Yes, we distinguish between the two classes of manufactured goods.

Mr. BRANDEIS. That is, such as are manufactured into articles in the latter process, and such as are in the earlier process manufactured like sheets and rods and wires?

Mr. MILLER. Yes, sir.

Mr. BRANDEIS. That is shipped under third class, and the other under first class?

Mr. MILLER. Yes, sir.

Mr. BRANDEIS. Those are subject to the twenty per cent increase?

Mr. MILLER. Yes, sir.

Mr. BRANDEIS. What is the specific effect of that in your business?

Mr. MILLER. The effect would be to limit the distance to which we could ship at a profit.

Mr. BRANDEIS. And eliminate you from a portion of that territory?

Mr. MILLER. From certain territory, yes."

(e) Abrasives. CURTIS (Record, pp. 4813-4814).

"Mr. BRANDEIS. I will ask you whether or not the imposition of these increased rates will contract the territory in which you can sell, or limit the amount which you can sell in that territory?

Mr. CURTIS. I have in mind a point, Moline, Illinois, which happens to be a point where large quantities of our materials are used —

Mr. BRANDEIS (*interrupting*). You mean in the plough works?

Mr. CURTIS. In the plough works principally. I have made some comparisons as to the cost of delivery. For example, the present freight rate from Worcester to Moline is 66 cents per hundred pounds, while our competitor, located at Tiffin, Ohio, has a present rate of 40 cents per hundred pounds, giving him an advantage over New England of 26 cents per hundred pounds. This being a less than carload rate, being third class, and subject to the proposed twenty per cent increase, would make the increase for the New England manufacturer, 13 cents a hundred; while that for Tiffin, Ohio, manufacturers is only 8 cents a hundred.

To go into it a little further, there is a representative competitor located at Chicago, and the present rate to Moline is 37 cents a hundred pounds. Our proposed rate to the West is 79 cents, making a still greater difference in favor of the Western manufacturer. It would be from 29 to 42 cents.

Mr. BRANDEIS. The Chicago rate is not being advanced at all?

Mr. CURTIS. As I understand, it is not contemplated at the present."

(f) Infant Foods — Drugs. BENKHART (Record, p. 4825).

"Mr. BRANDEIS. What would be the effect of this increase upon your business, in the affected territory — that one third of your business which is in the particular territory affected by these proposed increases?

Mr. BENKHART. Well, one of four things must happen: First, we either have to raise the price; or, second, change our package so as to give a less quantity; or, third, absorb the increase ourselves; or, fourth, probably vacate the field to a very great extent.

Mr. BRANDEIS. And that would mean, of course, a reduction in the volume of your business?

Mr. BENKHART. Yes.

Mr. BRANDEIS. You have, for your food, not only to pay the freight on what is going out, but where does your raw material come from?

Mr. BENKHART. About forty per cent of the product is cereal; barley, wheat and oats, coming from the West."

For the increases in class rates range on the first three classes from twenty to thirty per cent, and, on many articles of commerce, freight represents a large part of the value of the article, or at least of the materials treated by the Eastern manufacturers, —

(g) Cotton Goods. LAWRENCE (Record, pp. 4780-4781).

"I tried to compute the value of the freight, the percentage of value of the freight to the commodity, in order that I might try to show how it compared with the situation of the manufacturer in some other section. Take, for instance, cheap hosiery that sells for ten or twelve and a half cents a pair; the percentage of the freight to the value of that commodity is 4.9 per cent. A five per cent profit on gross sales is a reasonable profit. Therefore the manufacturer in Omaha or near Omaha of that grade of hosiery would be able to manufacture goods at a reasonable profit, while the mill in New England would not be able to do so. There are

1079 hosiery mills in the United States, and they are distributed pretty generally over the country.

Take, for instance, the matter of printed goods, that are principally manufactured and converted in New England. It costs 16.9 or practically 17 per cent of the value received by the printer to get these goods into Omaha from New England. A plant running on that grade of goods ought to turn its sales over some ten times a year.

To get the goods of a bleachery from New England to Omaha runs as high as 41½ per cent of the value that the bleacher gets out of his merchandise. That is why this bleachery is being constructed in St. Louis, and it is being constructed now because science has just made it possible to use water from that section of the country to properly absorb the dye liquors and get the desired results. The principal reason for the existence of that plant to-day is the lower freight rates that they will get by converting standard products, when they have a large market out there, to be able to earn a profit with economy."

The effect of curtailing the market of Eastern manufacturers may become serious not only to the industries directly affected, but to the communities in which they are located. The manufacturers and merchants, and their employees may move and relocate in the West; but the large numbers indirectly dependent upon long existing industries would suffer even more severely.

8. *The Proposed Increases in Class Rates would Seriously Increase the Cost of Living*

There has been a persistent effort to make the public believe that the proposed freight rate increases could be made without being felt by the consumer, and that in some way the increased costs would be absorbed by the manufacturer or merchant.

For instance it was contended that on a pair of shoes the additional burden would be only half a cent.

Such statements are wholly misleading. In the first place, the increase paid by the consumer is not a single increase on the freight of a finished article, but is the aggregation of increases, including not merely the increase on raw material and supplies, but the increases on innumerable articles which directly or indirectly enter into the cost of doing business, including ultimately increases in wages demanded by increased cost of living.

In the next place increased burdens on the manufacturer or dealer, except where necessarily absorbed by them in diminution of profits, are apt to reappear in an exaggerated form in the prices to the consumer. For instance, 10 cents additional per ton to the anthracite coal miner awarded after the 1902 strike is said to have resulted in a 25 cents per ton additional price to the dealer, and a 50 cents per ton additional price to the consumer.

IVES (Record, pp. 4475-4476).

"Mr. BRANDEIS. Something has been said here about the increases in the class rates and particularly the higher class rates affecting only luxuries. What is the fact?"

Mr. IVES. I must admit that I received the impression that the traffic officers of the railroads, or some of those who testified, had the impression that the majority of the articles moving in the classification were either luxuries or very high-priced necessities in which the freight was of so small a moment that it could be ignored. Such is not the case, as an examination of the freight received at any medium-sized station on the roads of any of these carriers, or an examination of the billing will show. It includes all of the commonest necessities of life, boots and shoes — not only meaning shoes that are sold for \$3.50, \$4 and \$5 a pair, but those that sell for \$1 and \$1.50 a pair. Also dry goods. It does not mean simply ribbons and laces. We would be glad to see ribbons and laces bear their proper share of the burden of transportation. But it means the commonest kinds of cheap prints, cheap underclothing, overalls, oil clothing and all those articles of commerce that are among the barest necessities of life. It also includes such articles as the common metals which are shipped in bars and rods at less-than-carload

rates under classification. Not iron and steel. Well, I think they are also moving now under classification, but brass and copper, all those articles on which the margin is so small that an advance in the freight rate will oftentimes prohibit the sale and stop the commerce, especially when there is not a similar advance made anywhere else."

It should be noted also that as the freight rate is imposed by weight and not by value, the added burden bears particularly heavily on the poorer classes, who not only spend a much larger proportion of their income in the necessities of life, but who purchase a coarser, heavier and less valuable article.

A demonstrable instance of the increased cost of living through increased rates is found in the increased price of food products to the inhabitants of Boston.

IVES (Record, pp. 4476-4477).

"Mr. BRANDEIS. How does this increase affect, if at all, the cost of the food products?"

Mr. IVES. It is proposed to raise the rate on butter, eggs, cheese, meats and dressed poultry 20 per cent. The Chamber of Commerce reports in Boston show — I think it is something like a million pounds — I won't say exactly, but several hundred million pounds of these articles on which I estimate the increase in rates to be between \$300,000 and \$400,000, which can only come out of the consumer for those articles in my opinion.

Mr. BRANDEIS. And that translated into the individual family in Boston would be how much?

Mr. IVES. A family of five, I believe, is usually considered a normal family.

Mr. BRANDEIS. Yes.

Mr. IVES. Three or four hundred thousand dollars with 600,000 population would be \$2.50 a head on the basis of a family of five.

Mr. BRANDEIS. Assuming the increase was no greater than the exact amount represented by the freight increase?

Mr. IVES. Yes, which is rarely the case."

9. *The Proposed Increase in Class Rates through Elimination of Competition between the East and West will Tend further to Increase the Cost of Living.*

Competition between manufacturers located in different communities is obviously desirable. It is a benefit to the West that it should be subject to the competition of the East. It is a benefit to the East that it is subject to the competition of the West. This is a benefit which extends alike to the manufacturers who by competition are made to exert themselves with greater vigilance as well as to the consumer who gets the benefits of the extra exertion, and of the necessary moderation in the manufacturers' profits.

Within the United States at least it is desirable that there should be the greatest possible interchange of commerce; but it is equally clear that important freight increases upon long-distance business will operate as an effective barrier to such interchange.

IVES (Record, p. 4476).

"Mr. Ives. The result of that can only be one thing. It eliminates the competition of the Eastern shipper ultimately. It makes it at least more difficult for him to compete, and it makes it thus easier for his competitor; and in the end the consumer is going to foot the bill."

10. *The Proposed Increase in Class Rates will Reduce the Volume of Long Distance Tonnage, and hence the Expected Gross Revenue of the Railroads*

As the proposed large increase in rates will curtail the markets of Eastern manufacturers, it is obvious that the volume of long distance traffic will be materially reduced.

(a) Boots and Shoes. JONES (Record, pp. 4699-4700).

"Mr. BRANDEIS. What, in your opinion, would be the effect of this increase in freight rates so far as it deals with shoes upon the revenue of the railroads within the official classification territory?"

Mr. JONES. It has always seemed to me the railroads were very unwise. It has always seemed to me of advantage to the railroads to carry freight along something like the lines that have been carrying it for the last fifteen or twenty years. They would certainly diminish it materially if they insist upon the advance that is now under discussion.

Mr. BRANDEIS. Are you aware of the railroads consulting with your association or with its members generally, or with the shoe trade generally in New England, as to the advisability of making this increase or as to what effect this proposed increase would have if carried out?

Mr. JONES. No, sir.

Mr. BRANDEIS. Upon the New England business.

Mr. JONES. We never had any idea of their intention to increase until it was announced.

Mr. BRANDEIS. Your own opinion is therefore that such an increase in freight rates as is proposed would to a very considerable extent eliminate the competition of the East in a large portion of the territory of the middle West, in shoes?

Mr. JONES. I think there is no question about that. That feature of elimination of competition is a very important one. Conditions as they are, or as they have been, I consider ideal in the shoe business. That is, the competition is free and unrestrained in the West and in the East. The East excels in some products and the West has pronounced advantages in another direction. These different conditions meeting in competition produce the most desirable result possible. If the Eastern manufacturer was eliminated from the Western market and the Western manufacturer supplied that trade wholly, it would certainly not be in the interest of the consumer.

Mr. BRANDEIS. You believe therefore that the interests of the consumer as well as the interests of the Eastern manufacturer and his employees, are at stake in such action as this, in increasing freight rates?

Mr. JONES. Absolutely."

(b) Brass. MILLER, (Record, pp. 4767-4771).

"Mr. BRANDEIS. Would or would not, so far as that territory is concerned, the imposition of this rate reduce the gross revenue of the railroads on your class of business?"

Mr. MILLER. That is rather a hard thing to say. I think, as nearly as I can tell, the result to the railroad would be a less amount of money paid to them by our company for freight than we pay now. It would have the result of increasing the competition very materially in the territory in which we could do business, as the facilities in our line of business or a large part of the facilities in our neighborhood, what is known as Naugatuck Valley, in Connecticut, would be too large an amount of facilities for a period of time for the territory in which shipments could be made profitably, which would result in disastrous competition."

(c) Cotton Goods. LAWRENCE (Record, pp. 4781-4782).

"My claim is this: It is necessary to keep this tonnage moving from New England out to the West for the sake of the railroad earnings. There are empty cars going West, and it is this great tonnage that is the greatest help in filling up those cars. Our raw materials come to a great extent by tidewater, and the loss of this business going West would simply mean the increase of the number of empty cars going out to those sections.

I regard railroad rates as very similar to taxation. The problem seems to be how to distribute the cost of operation among the users of a railroad and have prosperity all around. These railroads have suggested, as a means of getting more revenue, a method of advancing certain rates 20 per cent, it being the easiest way apparently to get that result. When we have a line of merchandise that has to be advanced for one reason or another, we first have to find what will happen to it when it is advanced, and as usual with our class of business, an article is made for a fixed retail price, and when it is advanced beyond that it reduces its sales, and therefore some substitute has to be provided.

The tariff board found, in framing the tariff, that when they got the rates beyond a certain point goods no longer came into the country, the Government no longer received revenue. It is the same way with the railroads. It seems to me they have not considered that beyond a certain point the revenue would decrease on account of tonnage decreasing."

(d) Abrasives. CURTIS (Record, pp. 4815-4816).

"Mr. BRANDEIS. Will you state whether or not, in your opinion, the gross revenue received from your business would, if these increased rates went into effect, be larger or smaller, for the railroads, than it is now?"

Mr. CURTIS. It is a general understanding among wheel manufacturers that they make a delivered price, and therefore, with the competitor located in Ohio, where they have natural gas, and a much lower price for coal, and they being nearer the raw materials, they are enabled to make a better price. It enables the manufacturer there to make a closer margin than we can, located in New England. These advances on New England manufacturers mean a tendency in a measure to drive the New England manufacturer West. In fact, I might say that our people have considered already, the proposition of establishing a factor in the West.

Mr. BRANDEIS. You have already considered the proposition of establishing a factory in the West?

Mr. CURTIS. A branch in the West, yes.

Mr. BRANDEIS. And, of course, if you did that, it would eliminate not only the business from the East to the West, but that long haul business of your raw material to the East?

Mr. CURTIS. Yes. I think, perhaps, our particular little industry in the East has a little different situation from most others, because we get our one prominent raw material in the far West and bring it a long haul to the East, and then manufacture it and take it back over the rails again to the consumer, giving the railroads a double haul.

Mr. BRANDEIS. And both hauls would be eliminated if the freight rate gets so high that you cannot any longer compete for the Western territory? You would have to abandon absolutely the Western field, or else establish a factory in the West to supply the Western field? That is the fact, is it?

Mr. CURTIS. Yes, that is the point."

This effect will follow, not alone because of the reduced West-bound shipments, but perhaps more largely from the reduced East-bound shipments, since so large a part of the materials and supplies comes from the West.

Boots and Shoes. JONES (Record, pp. 4606-4607).

"Mr. BRANDEIS. In this proposed increase there is one item other than the freight on shoes which vitally affects, does it not, the shoe industry, and that is the increase in the rate of leather?"

Mr. JONES. Unfortunately, practically a very large proportion of the upper leather we use is made in Milwaukee, Wisconsin, and Chicago and in that district. We are obliged to pay an increase under the new arrangement. Under the proposed arrangement we would be obliged to pay an increase on East-bound leather as well as on West-bound shoes.

Mr. BRANDEIS. That is true of a very large amount of sole leather that comes from Michigan and Wisconsin?

Mr. JONES. Yes, sir; and to some extent on goat leather from Philadelphia.

Mr. BRANDEIS. And on sole leather from different tanneries in Pennsylvania?

Mr. JONES. I am not familiar with the increase on all items. Some have been increased.

Mr. LYON. Did you state what has been the advance on the price of shoes, taking the last ten years?

Mr. JONES. No, sir, I did not, because it would be difficult to compare the finished product directly with the product of ten years ago; but I should say roughly it was ten per cent.

Mr. LYON. There has been a ten per cent advance?

Mr. JONES. Yes, sir.

Mr. BRANDEIS. It is a fact, is it not, that while your rate to Illinois points, for instance, the rate from the seaboard to Illinois points, is raised from 20 to 30 per cent on shoes, the rates from Chicago to those same points are not raised at all?

Mr. JONES. That is a very serious fact of the situation. That is a fact, of course. Our Western competitor pays no increase, and we pay a very substantial increase. That is the discrimination as it appears to us."

PART FOURTH

THE RAILROADS' CONTENTION THAT THEIR (ALLEGED) NEED OF ADDITIONAL REVENUE IS DUE MAINLY TO RECENT WAGE ADVANCES, AND TO THE BURDENS IMPOSED BY ACTS OF CONGRESS.

The recent wage advances were doubtless the provocation for the concerted and insistent demand of the railroads for increased freight rates. These wage advances have certainly been grasped by the railroads as an excuse for demanding rate increases. But, it is not true that the wage increases and Congressional action are responsible for a general need by the railroads of additional revenue.

The agitation of the railroads for increased rates commenced not with the recent wage advances, but two years earlier, when the depression threatened reduction of dividends. The action of Congress in abolishing rebates and passes has undoubtedly increased the railroads' revenues far more than the Congressional requirements of safety appliances and proper accounting and the limitation of the hours of labor have increased expenses.

(Record, pp. 2772-2773.)

Mr. STUART. What I mean by that is that in the process of regulation within the last two or three years there have been a great many new things introduced that all cost money.

Commissioner LANE. Has anything been introduced that has cost one half as much money as was put back into your treasury by the stopping of the rebates and stopping of the passes?

Mr. STUART. That is a matter of facts and figures that I would not be justified in stating. I might give an opinion, but it would not amount to anything.

Mr. LYON. I have heard that statement made by almost every railroad man who has come on the witness stand in this case. You have given the impression that, owing to the acts of Congress, certain

obligations have been imposed on the carriers which have cost a great deal of money, and therefore there should be increased rates, overlooking entirely the fact that during this same time the law has been enforced, which was not enforced before, when the rebates have been stopped, under which you cut an average of ten per cent out of those profits, and that came out of the net.

Mr. STUART. Of course, if one equalizes the other and that is a fact, I would have a right to state the things that appear to me that I know have made an increase.

Mr. LYON. You have, of course, knowledge as to the rebates being a large reduction from the rate itself?

Mr. STUART. Yes.

Mr. LYON. And that within the period of regulation or the last three years or so that has been practically stopped?

Mr. STUART. But, Mr. Lyon, the railroads have made, as I understand the testimony I have heard, no estimate of the things they have gone ahead and done that cost more money right along, and the railroads have done a great many things, so that this final increase of wages was so forceful that it made it necessary to then make a raise in the rates.

Mr. LYON. Let me tell you that the railroads have attempted to give the impression to the Commission and there has been some emphasis laid on it, even statements made in detail as to new laws requiring compliance with hours of service and safety appliances and such things, and the cost that they were to the railroads, overlooking entirely the fact that at identically the same time and contemporaneously there have been laws put into effect by which their revenues were very materially increased.

Mr. STUART. Yes; that is well, of course, to consider.

We submit that:

First: Some railroads, at least, do not need additional income.

Second: In some railroads any existing need of additional income is due to causes other than wage increases or acts of Congress.

Third: Every railroad which is properly undertaken and financed can meet any existing needs without rate increases, through the introduction of scientific management.

The facts hereinafter stated are derived mainly from the very valuable statements prepared by the accountants of the Commission under the direction of its attorney, Mr. Frank Lyon.

I. Some Railroads Have no Need of Additional Income

The following are to be taken as examples merely:

1. DELAWARE, LACKAWANNA & WESTERN RAILROAD COMPANY

Estimated increase in wages for one year \$951,647.16
(Figures made up as of June 30, 1910)

Gross Operating Revenue . . .	\$38,924,775
Capital Stock outstanding . . .	30,277,000
Net Operating Income	15,477,891 = 46 per cent on cost of Road and Equipment

Corporate Net Income for the year	15,068,014 = 49.77 per cent on capital stock outstanding
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Dividends paid	23,058,786 ¹ = 85 per cent on capital stock outstanding
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Additions, Betterments and Permanent Improvements, Sinking and Special Reserve Funds	2,471,020 = 8.16 per cent on capital stock outstanding
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Unappropriated Surplus . . .	32,072,279 = 105.93 per cent on capital stock outstanding
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The wage increase went into effect (at least in large part) on April 1, 1910. Consequently only approximately $\frac{3}{4}$ of the above estimated increase in wages, or \$713,735.37, should be applied in adjusting the earnings of the year ending June 30, 1910. If such increase of wages be allowed for, the earnings nevertheless would remain sufficient to pay:

Dividends on stock, 47.41 per cent.

¹ This amount includes extra dividends, amounting to seventy-five per cent.

2. PHILADELPHIA & READING RAILROAD COMPANY

Estimated increase in wages for one year (Record, p. 1879), \$1,579,709,
(Figures made up as of June 30, 1910)

Gross Operating Revenue	\$46,046,152
Capital Stock outstanding	20,000,000
Net Operating Income,	17,331,405 = 19.62 per cent on cost of Road and Equipment.
Corporate Net Income for the year	8,703,037 = 43.51 per cent on capital stock outstanding.
Dividends paid,	5,000,000 = 25 per cent on cap- ital stock outstanding.
Additions and Betterments made	2,070,661 = 10.35 per cent on capital stock outstanding.
Unappropriated Surplus	11,372,906 = 56.86 per cent on capital stock outstanding.

The wage increase went into effect (at least in large part) on April 1, 1910. Consequently only approximately $\frac{3}{4}$ of the above estimated increase in wages or \$1,184,782.81, should be applied in adjusting the earnings of the year ending June 30, 1910. If such increase of wages be allowed for, the earnings, nevertheless, would remain sufficient to pay:

Dividends on stock, 25 per cent.

Balance for reserves, 12.59 per cent.

3. PITTSBURG & LAKE ERIE RAILROAD COMPANY

(Fiscal year ending December 31, 1909)

Estimated increase in wages for one year	\$371,906.47
Gross Operating revenue	\$14,838,948
Capital Stock outstanding	15,000,000
Net Operating Income	8,214,288 = 34.98 per cent on cost of Road and Equipment
Corporate Net Income for the year	7,615,598 = 50.77 per cent on capital stock outstanding

Dividends paid	7,499,993 ¹ = 50 per cent on capital stock outstanding.
Unappropriated Surplus	10,479,796 = 69.86 per cent on capital stock outstanding

The wage increase went into effect (at least in large part) on April 1, 1910. Consequently only approximately $\frac{3}{4}$ of the above estimated increase in wages, or \$278,930, should be applied in adjusting the earnings of the year ending June 30, 1910. If such increase of wages be allowed for the earnings nevertheless would remain sufficient to pay:

Dividends on stock, 48.91 per cent.

4. LAKE SHORE & MICHIGAN SOUTHERN RAILROAD COMPANY

(Fiscal year ending December 31, 1909)

Estimated increase in wages for one year	\$1,480,747.47 ²
Gross Operating Revenue	\$45,110,997
Capital Stock outstanding	50,000,000
Net Operating Income	15,549,523 = 15.34 per cent on cost of Road and Equipment
Corporate Net Income for the year	11,654,361 = 23.308 per cent on capital stock outstanding
Dividends paid	5,935,980 = 12 per cent on cap- ital stock outstanding
Unappropriated Surplus	27,166,038 = 54.33 per cent on capital stock outstanding

The wage increase went into effect (at least in large part) on April 1, 1910. Consequently only approximately $\frac{3}{4}$ of the above estimated increase in wages, or \$1,110,560.61, should be applied in adjusting the earnings of the year ending June 30, 1910. If such increase of wages

¹ This amount includes extra dividends, amounting to forty per cent.

² Includes estimated increase on the whole system.

be allowed for, the earnings, nevertheless, would remain sufficient to pay:

Dividends on stock, 12 per cent.

Balance for reserves, 9.21 per cent.

5. LEHIGH VALLEY RAILROAD COMPANY

Estimated increase in wages for one year \$820,502.60

(Figures made up as of June 30, 1910)

Gross Operating Revenue . . . \$38,151,174

Capital Stock Outstanding	}	40,441,100
Preferred, \$ 106,300		
Common, 40,334,800		

Net Operating Income 13,541,920 = 22.04 per cent on
cost of Road and Equipment

Corporate Net Income for the
Year 8,137,400 = 20.12 per cent on
capital stock outstanding

Dividends paid 2,430,703 = 10 per cent on pre-
ferred stock outstanding,
and 6 per cent on common
stock outstanding

Additions and Betterments . . (Cr) 2,596,901¹

Sinking and Special Reserve

Funds (Cr) 95,547²

Unappropriated Surplus 27,219,780 = 67.48 per cent on
common stock outstanding

The wage increase went into effect (at least in large part) on April 1, 1910. Consequently only approximately $\frac{3}{4}$ of the above estimated increase in wages, or \$615,376.95, should be applied in adjusting the earnings of the year ending June 30, 1910. If such increase of wages be al-

¹ Includes credit for expenditures for additions and betterments during the fiscal years 1908, 1909, 1910 transferred to Road and Equipment, and to advances to subordinate lines, \$3,440,778.

² Credit balance of general reserve fund written off.

lowed for, the earnings, nevertheless, would remain sufficient to pay:

Dividends on preferred stock, 10 per cent.

Dividends on common stock, 6 per cent.

Balance for reserves, 12.62 per cent.

On December 21, 1910, this Company increased the dividend rate on its common stock to 10 per cent.

6. DELAWARE & HUDSON RAILROAD COMPANY

(Fiscal year ending December 31, 1909)

Estimated increase in wages for one year \$397,686

Gross Operating Revenue . . . \$19,525,859

Capital Stock outstanding . . . 42,501,000

Net Operating Income 8,067,379

Corporate Net Income for the
year 5,194,839 = 12.22 per cent on
capital stock out-
standing

Dividends paid 3,825,090 = 9 per cent on capi-
tal stock outstand-
ing

Unappropriated surplus 11,079,485 = 26.07 per cent on
capital stock out-
standing

The wage increase went into effect (at least in large part) on April 1, 1910. Consequently only approximately $\frac{3}{4}$ of the above estimated increase in wages, or \$298,264.50, should be applied in adjusting the earnings of the year ending June 30, 1910. If such increase of wages be allowed for, the earnings, nevertheless, would remain sufficient to pay:

Dividends on stock, 9 per cent.

Balance for reserves, 2.52 per cent.

7. PENNSYLVANIA RAILROAD COMPANY

Estimated increase in wages for one year \$7,052,573.80 .

(Figures made up as of June 30, 1910)

Gross Operating Revenue . . .	\$165,941,130	
Capital Stock Outstanding . . .	412,596,974	
Net Operating Income	43,739,026	= 11.19 per cent on cost of Road and Equipm't.
Corporate Net Income for the year	40,587,818	= 9.84 per cent on capital stock outstanding
Dividends paid	21,746,166	= 6 per cent on capital stock outstanding
Additions and Betterments made	15,743,789	} = 3.90 per cent on capital stock out- standing
Sinking and Special Reserve Funds	447,266	
Unappropriated Surplus	29,879,203	
		= 7.24 per cent on capital stock outstanding

The wage increase went into effect (at least in large part) on April 1, 1910. Consequently only approximately $\frac{3}{4}$ of the above estimated increase in wages, or \$5,289,430.35, should be applied in adjusting the earnings of the year ending June 30, 1910. If such increase of wages be allowed for, the earnings, nevertheless, would remain sufficient to pay:

Dividends on stock, 6 per cent.

Balance for reserves, 3.28 per cent.

The Stockholders of the Pennsylvania Company have received from time to time in addition to regular cash dividends salable rights to subscribe for stock, and there also have been invested in the property annually large surplus earnings. (Record, pp. 1961-1972.)

"Mr. BRANDEIS. Mr. McCrea, it is a fact, is it not, that during the 12 months last past in which falls this application of the Pennsylvania Railroad for a wholesale increase of rates, that the stockholders of the company have received in cash or its equivalent 12 per cent upon the stock?

Mr. MCCREA. No, sir; that is not correct.

Mr. BRANDEIS. They have received, have they not, a regular dividend, at the rate of 6 per cent?

Mr. MCCREA. Yes, sir.

Mr. BRANDEIS. And rights to additional stock which was sold upon the market, or could have been sold, by the stockholders, at an average price of eight dollars a share; that is, the rights sold at \$8 a share, which \$8 added to the \$6 regular dividend, makes \$14 a share; is not that a fact?

Mr. MCCREA. That is a fact, but that fact is not the result that was based, as you put it, on the 12 months which have been under consideration and are given here. The facts, as I have previously stated have been that in ten years there was \$116,000,000 of money, surplus money, much of which could have gone perfectly legally and legitimately to the stockholders, but which was taken away from them and was put into the property.

Then this money, this \$80,000,000 increase in stock was for the purpose of paying off, first, \$20,000,000 of old mortgage that was paying 6 per cent, and, second, paying \$60,000,000 worth of 5 per cent notes which we had to sell three years previously, and at the time when we could not sell any of our securities.

Therefore it seems to me nothing but legitimate and fair that the stockholders should have this opportunity of taking stock at par, which, so far as the market was concerned, was rating higher. Besides that, one of the other very large and important roads of this country, which was paying an 8 per cent dividend, had just given its stockholders an opportunity to take their stock at 25 per cent premium, and it fell absolutely flat.

Mr. BRANDEIS. You refer to the New Haven, I suppose?

Mr. MCCREA. I mention no names. It fell absolutely flat, and it had to be issued at par. Now, under these conditions that opportunity was given to the stockholders.

Mr. BRANDEIS. I think, Mr. McCrea, you misunderstood me. I did not ask you whether this 14 per cent, which was distributed to stockholders through rights and through the regular dividend, was

the result of the operations of that year. What I asked was merely whether it was not a fact that during those twelve months the stockholders had received in cash or its equivalent, an amount equal to 14 per cent upon the capital stock; and I understand you to say that that statement is correct?

Mr. McCREA. Yes. I did not understand you quite that way, however. I considered that you were putting it as covering the previous year.

Mr. BRANDEIS. Now, is it not also a fact that during this same period of 12 months there had accumulated surplus profits which were applied either in the way of betterments or upon sinking funds, or in some extraordinary fund, or retained in the surplus, to an amount aggregating about \$12,000,000, which sum is equivalent to 2½ per cent on the capital stock? That is true, is it not?

Mr. McCREA. Why, I think so. I have just testified there has been on an average for the last ten years — not last year, but the last ten years — \$12,000,000 of surplus that has been put back into the property. I have given the reasons why I thought it was wise, as a conservative policy.

Mr. BRANDEIS. Now, is it not also a fact, Mr. McCrea, that with the exception of the year 1901 the cash returned to the stockholders of the Pennsylvania Railroad Company was greater during the last twelve months than it had been in any year during the last ten?

Mr. McCREA. I do not know that I quite catch your question. Of course there has been more of our money expended in dividends, because our stock has been increased from about \$300,000,000 to over \$400,000,000.

Mr. BRANDEIS. I was not asking for that.

Mr. McCREA. I did not catch your question then.

Mr. BRANDEIS. I was asking whether the amount realized or realizable in cash, either through the regular dividend itself, or through the salable rights, during the last 12 months, has not been greater than in any period of 12 months during the last ten years; and I called attention specifically to the fact with one exception, and that was the year 1901, when the dividend was 6 per cent, as in this year, and the average price at which the rights were sold was \$9 going up from \$8 to \$11 or \$12. That was the question, whether with the exception of the year 1901 when the rights (and of course upon a much smaller issue of stock) were sold on an average of \$9, whether this

has not been for the stockholders of the Pennsylvania Railroad the most profitable year in cash returns.

Mr. McCREA. Taking into consideration their being allowed to subscribe to stock at par, perhaps that is true. But I do not see why it should all be concentrated in one year, and I do not see why, if you are going to cover it for a period going back to 1901, you should not also take into consideration the amount that the stockholders had to pay in the way of premiums on the issue that was made in 1905, I think, where they paid 120 for their right to subscribe.

Mr. BRANDEIS. But the stock that was issued during the last 12 months as in 1901, was stock issued at par, was it not?

Mr. McCREA. Yes. Do not misunderstand me. I do not want to befog any of the issues that are before us by failing to answer any of these questions that you may put out, or by bringing up any other matters. But it does not alter for one minute the principle that is involved in this question. You may put all this over, but it does not involve that which the Commission has to consider.

Mr. BRANDEIS. Well, Mr. McCrea, there may be different points of view to be considered?

Mr. McCREA. Yes, but for myself, I do not want my answers to befog the issues.

Mr. BRANDEIS. I shall endeavor to be as clear as I can. You spoke of these years being exceptions — the past 12 months and the year 1901 — in the large return from rights. I will ask you whether this is not also a fact, that taking the period of ten years to which I refer, the average return to stockholders from the sale of rights (in case they did sell them as they had the opportunity) was not equivalent to about \$2.50 a share per year; so that in the cash returns the stockholders have received (wherever they converted their rights into cash) in addition to dividends, which averages 6.15 per cent they received 8½ per cent upon the capital stock?

Mr. McCREA. Have you charged against that the amount of premium that they paid?

Mr. BRANDEIS. I am saying this is the amount of cash. The amount of premium they paid was a premium that was paid upon a very small amount of stock.

Mr. McCREA. I beg your pardon.

Mr. BRANDEIS. I do not mean small as compared with what figures we are used to dealing with, but small as compared with the outstanding capital of four hundred and odd million dollars.

Mr. McCREA. No. I do not carry figures in my mind very easily, but they are questions that can easily be verified. My recollection is that the stock was increased \$100,000,000.

Mr. BRANDEIS. There was a vote, but not an increase. I think you will find there was a vote, an authorization, I mean.

Mr. McCREA. It is a matter of very easy demonstration. I will furnish a statement of anything you want, if the Commission wants to know about it, or that you may want the Commission to know. I will be glad to have figured out and furnished to you exactly what the returns on the stock, to the holders of the stock in the Pennsylvania Railroad, has been for the last ten years.

Mr. GOWAN. I suppose you would want incorporated in that statement also the effect of the issue of stock upon the market value of the stock?

Mr. BRANDEIS. I will be glad to have you supplement it by anything which you think will be of value to the Commission.

Mr. McCREA. Of course you understand when you take the market value of the stock, say a thousand shares of stock before the increase, and then take the value of the stock after the increase, the falling off was greater than the gain that had been made by the dividends. In other words, so far as that is concerned, if you took the shrinkage in value into consideration, there was a loss in it to the stockholders. However, I will furnish you with all of those figures.

Mr. BRANDEIS. I think you will find that was not the fact ordinarily, although with the falling market we have had during part of the summer it may chance to be the fact. I think you will find if you go through the stock market returns, in connection with Pennsylvania issues, that the stock always proved to be worth more than the aggregate — I mean above par — of the rights which it was necessary to enable one to secure the stock."

During the last ten years the Pennsylvania has expended on its New York Terminals about \$100,000,000, which have heretofore yielded no returns, and from which an increase may soon be expected.

(Record, pp. 1972-1973).

"Mr. BRANDEIS. There is another point to which I wanted to call attention, in regard to these averages, I think part of which has been testified to. That is, in the next distribution to the stockholders of

cash or its equivalent there have been through surplus accumulations an increase in the assets of the corporation, in which all of the undistributed assets, equivalent to an average upon all of the stock of the company from year to year, of about four per cent, so that the aggregate earned upon this stock, including that which came to the stockholders in the way of cash dividends, in the way of salable rights, and in the way of additions to the surplus of the company, however applied, was more than 12 per cent upon the stock of the company for each year during the last ten years.

Mr. McCREA. If so, I am very much surprised. I only know, as a stockholder, what I have been getting, what returns came to me, and what there is any likelihood of my being able to accrue.

Mr. BRANDEIS. Let me see whether you have not misunderstood my question.

Mr. McCREA. I think likely I have. I do not follow the drift of a good deal of what you are saying.

Mr. BRANDEIS. I think it may be, if I am permitted to say so, Mr. McCREA, that you are thinking of arguing the question with me instead of simply answering yes or no or with any qualification, particular questions I have put to you. I have not undertaken to argue this at all, but merely to ask a question and to see whether the fact, as I understand the fact to be, is correct.

Mr. McCREA. All right. My answer to your question is that I cannot say; I have never had the matter presented in that way; I have never thought of it in that way.

Mr. BRANDEIS. Now, there has been, has there not, in addition to this accumulation of surplus which has averaged for these ten years four per cent for each of the ten years upon the outstanding capital stock, and also profit of the company, another amount not derived from income, but derived from the purchase and sale of securities (I mean not from operating income) and adjustments of that nature, aggregating about \$60,000,000.

Mr. McCREA. It is beyond me; I do not know.

Mr. BRANDEIS. Which would be equivalent, averaged over the whole period, to about two per cent additional upon the capital stock per annum, so that we have these figures: A cash dividend averaging a trifle over six per cent; salable rights averaging about two and one-half per cent; surplus from operations averaging about four per cent; and profit from stock and bond transactions averag-

ing about two per cent, making that financial result to the stockholders during the period of ten years.

Now, I should be glad, as you stated that you could not answer that, not having looked at it in that form, if you would be so good as to have that investigated and submit the detailed facts to the Commission, kindly sending me a copy.

Mr. McCREA. It is most delightful figuring to a stockholder and I am one. My only regret is that my stock which was bought ten years ago stands lower in the market to-day than I paid for it.

Mr. BRANDEIS. Those who are very near an object are frequently unable to see all of its beauties.

Mr. McCREA. Surely. After all, the feature that is up before the President of a railroad is when financing his company, that he must know he has something that he can sell to get the money he requires. If the investor would only look at it in that way, of course there would not be the slightest difficulty of getting all the money we want anywhere or at any time. They would be tumbling over themselves to give it.

Mr. BRANDEIS. Next, I want to ask you whether it is not a fact that during these ten years, and practically spread over that whole period, the Pennsylvania Railroad Company has been making an investment in connection with the New York terminals, tunnels and connection railway, which has exceeded \$100,000,000.

Mr. McCREA. Yes, sir.

Mr. BRANDEIS. What is the exact amount?

Mr. McCREA. The exact amount, as it stands now, as I recall, is \$97,000,000. We figure that the final cost of it after selling certain property that has been bought in connection with it, will be about \$108,000,000.

Mr. BRANDEIS. In the last annual report the figure given to December 31, 1909, was \$102,495,000.

Mr. McCREA. Yes. About \$115,000,000 will be the final figure. Then we have, however, a credit to that, consequent upon the sale of property, of about \$7,000,000 or \$8,000,000.

Mr. BRANDEIS. So that it will be about \$108,000,000 net?

Mr. McCREA. That is correct."

II. *In some Railroads any Existing Need is Due to Causes other than Necessary Increase in Operating Expenses.*

The following are to be taken as examples merely:

1. NEW YORK, NEW HAVEN & HARTFORD RAILROAD COMPANY

(Figures made up as of June 30, 1910)

Estimated wage increase	\$1,722,566.80
of which according to estimate of Pres. Mellen in the annual report to stockholders for the year ending June 30, 1910 will be made up by increase in passenger rates (P. 10)	858,753.00
	<u>\$863,813.00</u>

Gross Operating Revenue \$62,916,974

Capital Stock outstanding . . . 144,017,425

Net Operating Income 19,329,545 = 11.48 per cent on cost of Road & Equipment

Corporate Net Income for the year 11,117,781 = 7.72 per cent on capital stock outstanding¹

Dividends paid 9,759,081 = 8 per cent on capital stock outstanding

Additions & Betterments made, Sinking & Special Reserve Funds 19.560 (credit)

Unappropriated Surplus 14,196,253 = 9.86 per cent on capital stock outstanding

The wage increase went into effect (at least in large part) on April 1, 1910. Consequently only approximately $\frac{3}{4}$ of the above estimated increase in wages, or \$647,860, should be applied in adjusting the earnings of the year ending June 30, 1910. If such increase of wages be allowed for, the earnings, nevertheless, would remain sufficient to pay:

¹ Compare this figure 7.72 with per cent earned on capital stock in 1909, 6.12, and in 1908, 4.85.

Dividends on stock, 8 per cent.

Balance for reserves, .49 per cent.

The operating ratio exclusive of taxes was 62.95 per cent and including taxes was 69.28 per cent.

With an operating ratio of 62.95 per cent, yielding 11.48 per cent on the cost of road and equipment, it is obvious that the additional charge of \$863,813.80 on account of increase in wages would not unduly strain the resources of this Company, and that if it required additional revenue it must be for other reasons. These are to be found in the extraordinary financial operations of this Company in connection with its policy of expansion, and of securing a monopoly of transportation in New England, resulting in the following capital increases since June 30, 1905:

Capital stock from \$80,000,000 to \$144,017,425.

Funded debt from \$12,004,000 to \$232,052,500.

although the "Mileage operated—all tracks" remains substantially the same, to wit: 4,245 in 1905, and 4,459 in 1910:

As an incident of this expansion, note the following:

First: The issue as of January 1, 1908, to stockholders at par of \$39,025,000. Six per cent gold debenture bonds, convertible into stock after January 1, 1915, at par.

Second: The authorized issue to stockholders on January 1, 1910, at \$125 per share of 454,695 shares of stock, paying a dividend of 8 per cent.

Third: The acquisition of a controlling interest in the Boston & Maine stock largely by exchange share for share of 8 per cent New Haven stock for stock of the Boston & Maine now paying 6 per cent.

Fourth: The acquisition of the coastwise steamship lines now vested in the New England Navigation Com-

pany at a book cost of \$54,510,969, on which net income for the year ending June 30, 1910, was \$1,618,773.57, or 2.99 per cent on the investment.

Fifth: The acquisition of the equities in the Rhode Island trolley lines now vested in the Rhode Island Company at a book cost of \$24,220,978, on which the net income for the year ending June 30, 1910, was \$573,565.33, or 2.36 per cent on the investment.

2. NEW YORK CENTRAL RAILROAD COMPANY

(Figures made up as of June 30, 1910)

Estimated increase in wages for one year	\$3,590,647
Gross Operating Revenue	\$101,368,411
Capital Stock outstanding	222,729,300
Net Operating Income	23,010,920 = 9.12 per cent on cost of Road and Equipment
Corporate Net Income for the year	16,012,771 = 7.19 per cent on capital stock outstanding
Dividend paid during the year	11,147,679 = 5 $\frac{1}{4}$ per cent on capital stock outstanding
Unappropriated surplus	15,737,803 = 7.06 per cent on capital stock outstanding

The wage increase went into effect (at least in large part) on April 1, 1910. Consequently only approximately $\frac{3}{4}$ of the above estimated increase in wages, or \$2,692,986, should be applied in adjusting the earnings of the year ending June 30, 1910. If such increase of wages be allowed for, the earnings, nevertheless, would remain sufficient to pay:

Dividends on stock, 5 $\frac{1}{4}$ per cent.

Balance for reserves, .98 per cent.

This Company after knowledge of the demand for increased wages, increased its dividend from 5 per cent to

6 per cent, — 5 per cent being the highest rate paid by the Company for seventeen years, with the exception of the year 1907. The increase in the dividend of 1 per cent on the outstanding capital stock amounts to nearly $\frac{2}{3}$ of the total estimated year's increase in wages.

The facts were thus explained by President Brown:

(Record, pp. 2555-2560.)

"Mr. BRANDEIS. Now, Mr. Brown, did Mr. Morgan, as a member of the Executive Committee, approve of the increase of the dividend in the year 1910 from 5 to 6 per cent?

Mr. W. C. BROWN. I cannot answer that; I do not recall; I cannot say. I would not undertake to say.

Mr. BRANDEIS. That increase was voted by the Board of Directors, was it not?

Mr. W. C. BROWN. Yes, sir.

Mr. BRANDEIS. On the 12th of March?

Mr. W. C. BROWN. About that time; yes.

Mr. BRANDEIS. And for at least two months or three prior to that vote taken by the Board of Directors, you and the other directors were familiar with the fact that a concerted demand upon the Eastern railroads was being made for an increase in wages?

Mr. W. C. BROWN. It was known that such a demand was likely to be made.

Mr. BRANDEIS. You referred to the fact that the meeting was held in Boston in December?

Mr. W. C. BROWN. About that time.

Mr. BRANDEIS. That is, three months previous; and Mr. Willard referred to the fact that when, on January 15th, he became President of the Baltimore & Ohio, there was already a committee there waiting to make the demand upon him for the increase. So that when the directors voted to increase this dividend from 5 to 6 per cent, they did it with full knowledge that the employees of this road, in common with those of the other roads, were demanding an increase of compensation?

Mr. W. C. BROWN. That they were going to demand an increase.

Mr. BRANDEIS. Yes. Is it not a fact that for 17 years — that is since 1893 — with the exception of one single year, the dividend rate upon the New York Central has not been as high as it is to-day since you increased that dividend?

Mr. W. C. BROWN. I could not testify in regard to that. The statements of the road will show what that dividend was.

Mr. BRANDEIS. The statements of the road will show it; and I want to call your attention to it, because you used the expression, "restoring the dividend." It appears from the reports accessible to me that there was but one such year, and that was 1907, when the rate was 6 per cent; and in all other years the rate was either 5 per cent or less than 5 per cent. So that with full knowledge of this wage increase pending, and with knowledge of the other facts that have been testified to as to the financial condition of the company, this company of which the greatest banker of the world was a member, increased the rate of dividend?

Mr. W. C. BROWN. Yes, sir.

Mr. BRANDEIS. Is it not a fact that by increasing that rate of dividend you disabled yourself to the extent of \$1,786,000 a year from laying by that surplus from which betterments and improvements may be made, which *you* deemed and you say the bankers deemed to be a proper and necessary incident of a railroad which should deserve good credit?

Mr. W. C. BROWN. Yes, sir; but —

Mr. BRANDEIS. And did you —

Mr. CLYDE BROWN. Wait a moment; Mr. Brown has not finished his answer:

Mr. W. C. BROWN. But in doing that we increased a dividend that was less than the men who held the securities of the New York Central Railroad could have gotten on a first class farm mortgage — a dividend about equal to the product of the four per cent bonds that we were selling; for those bonds are to-day selling almost on a five per cent basis, if we can sell them at all. And the same reason that made an increase in wages logical and necessary applied to the people who held the stock of the New York Central Railroad.

Mr. BRANDEIS. Taking the people who held the stock of the New York Central Railroad, do you not concede that it was your duty, and the duty of the fellow directors of the New York Central Railroad, if such a surplus is necessary for the maintenance of its credit, to withhold the granting of the dividend at a time when you know demands for increase of wages are to be made which necessarily will impair a portion of your net revenues applicable for the payment of dividends and taking care of your other charges?

Mr. W. C. BROWN. No, sir; I do not.

Mr. BRANDEIS. Was the question considered at your directors' meeting at which this dividend was voted — what the effect would be upon the credit of the New York Central and upon its ability to borrow money in the markets of the world?

Mr. W. C. BROWN. I do not recall whether it was or not; but there is no question but what the increase to six per cent, in my opinion, made it possible to dispose of about \$44,000,000 of the stock of the company.

Mr. BRANDEIS. Is it not a fact, Mr. Brown, that the \$44,000,000 of stock of the company had been disposed of before the directors voted, on March 12, 1910, to increase that dividend?

Mr. W. C. BROWN. The entire issue has not been disposed of yet. There is not disposed of between half a million and a million of that.

Mr. BRANDEIS. I do not refer to trifling amounts; but I refer to that portion, that great portion, of that issue which was taken by the stockholders or by the assignees of rights purchased in the market from the stockholders.

Mr. W. C. BROWN. I think a large part of it had been at that time.

Mr. BRANDEIS. Yes. And yet with all that knowledge of financial needs, and all that wealth of advice which you could have from the financiers on your board, you voted to increase that dividend?

Mr. W. C. BROWN. Yes, sir.

Mr. BRANDEIS. And raised it to a point higher than it has been for seventeen years, with the exception of the single year 1907?

Mr. W. C. BROWN. Yes, sir."

The stockholders received, in addition to their regular dividend from time to time, salable rights to subscribe for stock, which during the past ten years averaged 2.7 per cent a year.

(Record pp. 2560-2571.)

"Mr. BRANDEIS. Mr. Brown, you said that this dividend, this return which those gentlemen, the stockholders (men, women and children) have received, is less or no more, or was less or no more than they might have received even upon a bond, or upon most bonds. I will ask you whether it is not a fact that in these very twelve months in which you increased the rate of dividend from 5 to 6 per cent, these stockholders received, in addition to the 5 per cent

dividend, rights convertible on the market in cash at the price of from six and three quarters to eight and three quarters dollars per share, making on an average at least seven dollars extra dividend in cash or its equivalent for this period of twelve months?

Mr. W. C. BROWN. I cannot testify in regard to that, and I do not recall the date at which the New York Central stock receded to or very near par — I think to par. I am not sure whether it was after the sale of this stock or before.

Mr. BRANDEIS. I beg your pardon; I overstated the market price of the rights.

Mr. W. C. BROWN. Yes.

Mr. BRANDEIS. They varied from five and a half to six and three eighths dollars; and the time of the issue — I speak subject to your correction after you have examined the figures — was about the 26th or 28th of December. It was voted at that time, so that that was the price at the beginning of the year.

Mr. W. C. BROWN. Yes, sir.

Mr. BRANDEIS. I will ask you, further, whether in giving these figures to the Commission this morning in answer to the question presented by your counsel — I think it was by your counsel, but perhaps that is an immaterial point — whether in giving the figures in regard to the dividends paid by the New York Central, you have not ignored that dividend or those dividends paid from time to time by way of rights salable upon the market?

Mr. W. C. BROWN. I do not think they were included in the computation.

Mr. BRANDEIS. I wish you would verify the figures and advise the Commission whether it is not a fact that the average covering the period of the last ten years derived by your stockholders or derivable by them from a sale on the market of rights, taking the average of the highest and the lowest prices, was \$2.70 a share each year.

Commissioner CLARK. Mr. Brandeis, what do you figure the sale of these rights that you referred to, as to this last issue of stock was worth to the stockholders of the New York Central Railroad?

Mr. W. C. BROWN. I figure that it was worth to the stockholders, in the sense of getting cash — by that I mean the immediate cashing in of the transaction —

Commissioner CLARK. Whether they cashed in or not?

Mr. BRANDEIS. Well, acting on the assumption that they cashed in, I assume necessarily that it was worth over six dollars a share;

that is, for all those who sold it it was equivalent to six dollars a share.

Commissioner CLARK. On the capitalization?

Mr. BRANDEIS. On the whole capitalization of the company at that time.

Commissioner CLARK. How much stock was issued?

Mr. CLYDE BROWN. Forty-four million dollars.

Mr. BRANDEIS. There was forty-four million dollars of stock issued on the basis of 25 per cent. That is, each four shares of stock was entitled to one share of new stock. The right, therefore, at six dollars, was, for each share of stock — four shares together would be entitled to a fifth. Four times six are twenty-four. Four times seven and three-eighths ran it up to 132 or 134 or 135 or 136. I think, as a matter of fact, the market price of the stock at that time was in the neighborhood of 140, because, of course, the rights —

Mr. W. C. BROWN. At what time?

Mr. BRANDEIS. At the time these rights were being sold.

Mr. W. C. BROWN. You mean these last ones?

Mr. BRANDEIS. These last ones.

Mr. W. C. BROWN. It was not within about twenty points of that.

Mr. BRANDEIS. Mr. Brown, let me just point this out to you. It is merely a question, of course, of reasoning for a moment. If I am correct in the figures which have been furnished me — and I think I have them from "The Financial Chronicle" — that these rights were selling for from $5\frac{1}{2}$ to $6\frac{3}{4}$ on the market, and each share was entitled only to one-fourth of a share, it took four rights to get one share of stock. At the lowest price that stock, convertible just at the right price, would have been 122. At the highest price, it would have been 132. But as a matter of fact the market on stock is almost always, as you know, a certain number of points (varying according to the time when the installments are payable, very much) above the cost of the aggregate of the number of rights plus par. So that I think it is safe to say that during a portion of this time, at least, it must have been between 132 and 140. Just where it was is, of course, unimportant. The only thing that is important for me is the question as to the market value of the right. Now, Mr. Commissioner, your question was what it was worth other than that —

Commissioner CLARK. No, that is it.

Mr. BRANDEIS. That was the question.

Mr. CLYDE BROWN. You assume, of course, Mr. Brandeis, that

if the rights on this entire \$44,000,000 had been offered for sale they would have brought this premium in the market?

Mr. BRANDEIS. Every single stockholder had the option of either selling his right on the market or of investing it in stock; and some could sell part and invest part, as was undoubtedly done.

The CHAIRMAN. Let me see if I understand that transaction, Mr. Brandeis. A stockholder had the option of taking this additional issue at par; his *pro rata* share?

Mr. BRANDEIS. His *pro rata* share at par.

The CHAIRMAN. And at about what price was the stock selling at that time?

Mr. BRANDEIS. I have not the quotations here at the moment; but judging from the price of the rights it must have been somewhere between — at different times during the period in which one could subscribe, it must have been somewhere between 124 and 140; and it varied.

The CHAIRMAN. What is it now?

Mr. BRANDEIS. I do not know, and I do not care. But what is important is this —

The CHAIRMAN. Then, are you not assuming, in all that, that the stockholders could have taken that \$44,000,000 of additional stock and sold it right off for cash at 132?

Mr. BRANDEIS. I do not assume that. I do not assume it at all, Mr. Chairman. I do want to explain my position on this point, because it has some significance.

The question is what you are taking out of this property. These gentlemen say, "We must have higher rates in order that a surplus may be laid by which will maintain the credit of the road." Now, there are two ways of getting a surplus. One way is by earning more. The other way is by paying out less.

The CHAIRMAN. Pardon me: Are you not assuming that the rights for the whole forty-four millions could have been immediately sold at five or six dollars?

Mr. BRANDEIS. It is a question of justice to the stockholder; and I am assuming what is undoubtedly a fact — that any stockholder who chose could have converted his right into cash at the moment if he did not prefer to have an investment for the future. Now, a great many of them did do it. Others did not do it. Those others who did not do it acquired for one hundred dollars what was then worth in the market anywhere from \$124 or \$128 to \$140. What I

am calling attention to is this: There has been made here constantly, reiterated by each one of the presidents who have spoken, and by others, the statement that the stockholders get only a beggarly (without using that expression) 6 or 5 or 6 or 4 or 7 per cent. Now, that is absolutely inaccurate. They get that as a regular dividend, but they have gotten something else — money, or its equivalent in the market. And that equivalent, which they have gotten, if they did not convert it into money, has gone into another thing which is drawing, as you will see in this particular instance, at the present time, 6 per cent, and is a leech in the sense of the large dividend which is paid upon the property.

I have no question, and I believe the Commissioners can have no question, upon the facts which have been presented here, that to have increased the rate of dividend when they did, and to have given away anything to stockholders, if there was another way of financing the necessities of this road, was something that in the conservative, wise and efficient management of this property ought not to have happened. But what I wanted to call attention to is something which Mr. Brown had overlooked, viz.: That while the regular rate of dividend was a certain figure, the stockholders had gotten, in the shape of cash or a "melon" or a "plum," or whatever you wish to call it, some other thing which has in all this decade been more than equal to half of the dividend paid. That is, the cash value of the right, averaged over each year, has been more than one-half of the dividend. It has been equivalent to more, therefore, than 5 per cent or $5\frac{3}{4}$ — 5 per cent plus 2. It has been, perhaps, 5.15 or 5.25, plus 2.75. That would have made the equivalent of 8 per cent which every stockholder of the New York Central has gotten during the last ten years, unless he has chosen, in lieu of cashing his right, to take new stock. Now, that is true; is it not?

Mr. W. C. BROWN. No, sir, and I would like to ask you this question: Suppose a shareholder avail himself of his right to take that stock at par. You say that is equivalent to six per cent or whatever it was — \$6 a share if he took it.

Mr. BRANDEIS. On the present rate of dividend.

Mr. W. C. BROWN. But three months later, when the stock went to par, what did he have then?

Mr. BRANDEIS. If he had not been fortunate in selling it, he had his stock then, and would get whatever dividend the Company would pay.

Mr. W. C. BROWN. He had his stock then worth par.

Mr. BRANDEIS. That is true of everything. You cannot have your cake and eat it too. If you have stock and it fluctuates in value, if it goes up it is worth something more. When the man had Lake Shore stock and it went to 200 and went to 300 and went to 370 and 400, he got the advantage of having held Lake Shore stock. When years ago a man who had bought Atchison at 125, saw it go down to two or three or four, he had the misfortune of seeing his stock go down, and so it may be with the New York Central. I saw that every stockholder who has been here — let me ask you whether or not it is a fact that you have failed to mention that which the stockholder got out of it, and it is immaterial whether he gets out of it as a direct dividend or an indirect dividend.

Mr. W. C. BROWN. Of course you have asked that question. I say this in answer to it, that it would not have been possible for the New York Central to have sold \$44,000,000 of stock on the market without putting that stock down to ninety, I believe. Even with the precautions taken, it went to within a few points of par. I think to have attempted to sell the \$44,000,000 to the public generally would have resulted in putting that stock below par.

Mr. BRANDEIS. I shall not quarrel with you on that question.

Mr. W. C. BROWN. It is simply a matter of opinion.

Mr. BRANDEIS. It is not for me to raise the question why any such course as that was pursued, whether it would have been wise, or whether it would have been wise at all to undertake to market that amount of stock at that time. All I am asking you is and all I did ask you was whether it was not a fact that the stockholders, every one who wanted to, got that much in cash?

Mr. W. C. BROWN. They got it if they were successful in immediately selling their rights. If they held their stock they got nothing, because the stock went down to par within a few months after they took the stock.

Mr. BRANDEIS. You spoke of immediately selling your rights. There was no use in going beyond the items you gave of five and one-half to six and three-quarters, which covered the whole period in which a right existed, because of course it expired at a certain time. It fluctuated in a very narrow margin, considering rates generally, between five and one-half and six and three-quarters."

The net income of the New York Central was largely impaired by the deficit on the Boston & Albany division which had been leased on the basis of the New York

Central paying eight per cent rental — as a part of its policy of expansion:

(Record, pp. 2571-2574.)

"Mr. BRANDEIS. I want to come to another point. In answer to a question of Commissioner Prouty's I understood you to say that the loss on the operations of the Boston & Albany Railroad was about \$3,000,000?

Mr. W. C. BROWN. Approximately that, I think.

Mr. BRANDEIS. I will ask you this question, whether it is not a fact that the loss in recent years was this, as follows: 1906, \$450,181; 1907, \$1,339,633; 1908, \$1,624,177; 1909, \$577,349 — those being the general figures — and then for the last year, to June 30, 1910, the loss was \$578,349. Those are the figures, are they not?

Mr. W. C. BROWN. I could not say; I could not testify to that without looking it up.

Mr. BRANDEIS. The last figure I have only from the report published in the papers.

Mr. W. C. BROWN. I assume they are right.

Mr. BRANDEIS. The figures for the other year I have from a letter which you wrote to the Secretary of the Worcester Board of Trade, in which you say, "The Boston & Albany deficit — that is, the part of the 8 per cent dividend on the stock of the New York Central Railroad Company has been called on to make good — is as follows," and you give for those four years which I enumerated the figures I gave, and the last one I have from the report in the paper.

As you stated there and here, that deficit is arrived at or that loss, as it was called, is arrived at by the fact that the New York Central had to pay, under its lease, in addition to its fixed charges, an eight per cent dividend, and that also, in addition to a certain other dividend which the stockholders got out of certain other assets which you did not take over, three-quarters of one per cent dividend in addition to the eight per cent dividend which is paid by the New York Central. That dividend is on \$25,000,000 of stock, is it not?

Mr. W. C. BROWN. I am not sure, but I think so.

Mr. BRANDEIS. And consequently in 1908 that stock, in which the loss was \$824 earned less than 2 per cent — very materially less than two per cent — and in 1907 a little more than three per cent, and for this whole period has been extremely disastrous, apparently, so far as the direct operations of the road are concerned. Is not that the fact?

Mr. W. C. BROWN. The figures speak for themselves. It has not been a profitable operation directly.

Mr. BRANDEIS. You use the expression in that letter: "In other words, of the five years given, the New York Central has paid out of its own treasury \$4,019,555.71 for the privilege of operating the Boston & Albany Railroad."

I ask you, Mr. Brown, whether it is in your opinion just that shippers and consumers should be called upon by increases in freight rates for what apparently are errors of judgment of the management in leasing property on terms which even in the best years of business are burdensome to the railroad?

Mr. W. C. BROWN. No, in a general way I should say no.

Mr. BRANDEIS. Taking this year 1908, for instance, the amount of that deficit which has gone simply to provide dividends to these stockholders of the Boston & Albany Railroad is in itself more than one half of this increase in rates, and in itself more than one half of the increase in wages, and more than one half of the estimated amount of revenue?

Mr. W. C. BROWN. You mean that for one year?

Mr. BRANDEIS. Yes, and it is nearly so in the year 1907. Is it not a fact, if such mistakes are made by the management, that it is only just and fair that the stockholders of the company which made the mistake should bear the results of the error which their agents have made?"

In determining the cause of any existing need of the New York Central Railroad due consideration should be given to the early stockwatering practiced by this Company. See Williamson (Record, pp. 4085-4093, 4056-4077).

(Record, pp. 2574, 2576.)

"Mr. W. C. BROWN. Of course, the New York Central has got to bear whatever loss there is in the operation of the Boston & Albany Railroad.

Mr. BRANDEIS. I mean legally it must do it, and I daresay it has done it as cheerfully as one might; but I say where that is done, this lack of surplus, for instance, which you have, to the extent of \$95,000,000 in the last five years, could be directly attributable to a single mistake made by the directors of the New York Central?

Mr. W. C. BROWN. I do not think that it was a mistake.

think that at the time it was made it was a fairly good arrangement, a fairly favorable arrangement for the New York Central; but since that time there has been a very great change in conditions. Wages have been increased very greatly, the expense of furnishing the service has increased very greatly in almost every respect, and with anything like a corresponding increase in rates, commensurate with these increases, the Boston & Albany would not have such a deficit, but would have some net earnings.

Mr. BRANDEIS. I will ask you whether or not you are not mistaken in applying your general proposition to the Boston & Albany.

Mr. W. C. BROWN. I do not apply it to the Boston & Albany; I apply it to the general situation.

Mr. BRANDEIS. You have, in operating the Boston & Albany, and you have given that as a reason why this deficit has arisen. I will ask you whether or not it is a fact that on the Boston & Albany, prior to this award, wages had not risen, as they had upon other New York Central lines, so that when the arbitrators came to adjust wages on the Boston & Albany, it became necessary to make a raise in wages, so as to make the raise on the Boston & Albany 14 per cent as against an average of $8\frac{1}{2}$ per cent on the whole system?

Mr. W. C. BROWN. I think that is the case.

Mr. BRANDEIS. And is it not also a fact that, if we may judge the operations of the future from the immediate past, if you add these great increases of 14 per cent to the operation of the Boston & Albany, that for this period, for the year at the increased rate, this deficit for June 30, 1910, would not have been \$577,000, but would have been practically \$1,000,000?

Mr. W. C. BROWN. I have not made the computation. I think probably that is correct."

3. BALTIMORE & OHIO RAILROAD COMPANY

(Figures made up as of June 30, 1910)

Estimated increase in wages for one year (Record, p. 1608)	\$2,174,910
Gross Operating Revenue . . .	\$ 90,763,401
Capital Stock outstanding	
Preferred, \$ 60,000,000	212,132,797
Common 152,132,797	
Net Operating Income	24,497,854 = 8.71 per cent on cost of Road and Equipment

Corporate Net Income for the year	16,256,554 = 7.66 per cent on capital stock outstanding
Dividends paid	11,474,212 = 4 per cent on Preferred Stock outstanding 6 per cent on Common Stock outstanding
Additions, Betterments and Permanent Improvements account	415,761 = .27 per cent on Common stock outstanding
Unappropriated Surplus . . .	22,377,100 = 15.3 per cent on Common stock outstanding

The wage increase went into effect (at least in large part) on April 1, 1910. Consequently only approximately $\frac{3}{4}$ of the above estimated increase in wages, or \$539,589, should be applied in adjusting the earnings of the year ending June 30, 1910. If such increase of wages be allowed for, the earnings, nevertheless, would remain sufficient to pay:

Dividend on preferred stock, 4 per cent.

Dividend on common stock, 6 per cent.

Balance for reserves, 2.03 per cent.

The increased wages amount to 2.39 per cent of the gross operating revenue for the year 1910. If the operating income had been reduced by the estimated proportion of increase in wages (\$1,635,321), it would have been equivalent to 57/100 of 1 per cent of the cost of road and equipment.

In 1905 the dividend rate on the common stock was raised from 4 per cent to 5 per cent; in 1906, from 5 per cent to 6 per cent. The amount of the common stock outstanding was \$124,272,060 in 1905, and \$134,781,354 in 1906.

The financial needs of this Company as respects income

appear to be due to having raised their dividend rate improvidently.

(Record, pp. 2297-2298.)

"Mr. BRANDEIS. You have referred a number of times to the fact that there was a deficit in 1908. Is it not a fact that that deficit arose merely because in the preceding year the dividend rate had been increased by the management from five to six per cent?

Mr. WILLARD. Of course. If that dividend had been two per cent they earned enough to pay that; but in line with that thought, — I should say in reply to that question that the earnings the year before very amply justified the payment of the six per cent dividend, because the road earned 12 per cent or practically that.

Mr. BRANDEIS. It is a fact, is it not, that the year before this deficit arose, the management in its wisdom raised the rate of dividend from five to six per cent?

Mr. WILLARD. I rather think that is a fact.

Mr. BRANDEIS. And it is also a fact that the deficit in the year 1908, of which you have spoken, is less than the amount of that one per cent of dividend?

Mr. WILLARD. Yes, that is true."

III. *Some Railroads Recognizing the Need of Economy Show Increased Net Earning even since the Wage Increase.*

ERIE RAILROAD

Four months ending Oct. 31, 1910, as compared with 1909. Net Operating Earnings, increase, \$478,384.29, although its net operating Revenue for the year ending June 30, 1910, was \$1,795,699 more than the preceding year, and \$2,482,970 more than the average of the last ten years.

WABASH RAILROAD

Four months ending Oct. 31, 1910, as compared with 1909. Net Operating Earnings, increase, \$12,883.37, although its net operating Revenue for the year ending June 30, 1910, was \$1,188,689 more than the preceding year, and \$1,466,694 more than the average of the last ten years.

Even if it should be found that some railroads need — and their security holders deserve — additional revenue, it certainly should not be supplied by general increase of rates, applying to all railroads. Any individual need should be considered separately and dealt with in accordance with justice to all concerned and the commercial possibilities.

PART FIFTH

THE RAILROADS' CONTENTION THAT GREATER INCOME IS IMPERATIVE IN ORDER TO SECURE NEEDED NEW CAPITAL

It is asserted by the railroads that their credit has been impaired through increased operating expenses and government regulation; that the restoration (or preservation) of their credit requires an annual net income sufficient to maintain (or increase) present dividends and to set apart a large surplus for improvements; and that to obtain this net income an increase of rates is essential.

We submit that if the credit of American railroads is in any respect impaired, the impairment is due either to the unwarrantable attack made upon it by the railroads and their associates, or to their individual mismanagement; and that it is not the result of any necessary increase in operating expenses or of government regulation.

I. *The Attack upon Railroad Credit*

The railroads and their so-called "friends" have been engaged for nearly three years in a campaign of publicity to justify a proposed general increase in rates. Throughout that campaign many misleading or exaggerated statements have been spread broadcast, both in Europe and in America, picturing the present or future financial needs of our railroads and necessarily tending to raise a doubt in the mind of the reader as to the stability of railroad investment.

(Williamson: Record, pp. 4175-4206.)

(Slason Thompson: Record, pp. 4032-4062.)

(C. C. McCain: Record, pp. 4288-4308.)

Stuart (Record, pp. 2758, 2759, 2789, 2792).

"Commissioner LANE. Did you ever have a better year than you had last year?"

Mr. STUART (Vice-President Erie Railroad Co.). No, sir.

Commissioner LANE. What would you think of a business man who would go around the country telling his banker and the people on the streets from whom he might want to borrow money some time, that things were going badly with him, and the bank cashier would say to him, "You had the best business last year that you ever had; how is it things are going badly?" And he would say, "Yes, but I am afraid that next year I will have some new expenses. The demands are becoming stronger upon me. I have to pay out more money; I will have to put out a larger output of goods." What would you think of that kind of a business man, who would try to discredit his own credit in that way?

Commissioner CLEMENTS. Have not the foreign lenders of money, during these 18 years past, loaned millions and hundreds of millions of dollars on these properties?

Mr. STUART. I was fortunate enough to be in Paris with these other gentlemen and I made some inquiries about the money situation. A gentleman there, who represents the American people, told me that the French people saved out of their daily incomes. The French are the most frugal people in the world. I was told that the French people save \$550,000,000 a year out of their incomes. They accumulate that amount. The best they can do in France is to get 2 or 2½ per cent on their investments. They would be very glad to take 4 per cent on an investment in American securities. Of course these people are to some extent controlled by the people who deal with the Americans. The French peasant, when he wants to buy a hundred-dollar bond, does not know what security he is buying.

Commissioner LANE. When he is told by the American railroad presidents that the United States are in a very bad condition over here at a time of unusual prosperity, he does not ask to look at the figures but simply takes the word of the president for it.

Mr. STUART (Vice-President of the Erie Railroad Co.). You were there, Mr. Lane, at the time I was there. I then talked to some men about it. Did you not read in the English papers that every effort was being made by public men to show that there was really nothing wrong?

Commissioner LANE. Yes; but I say that every prominent railroad man was as bearish as could be about the stock market.

Mr. STUART. I do not say that all of them were very optimistic. This man furthermore told me that they had undertaken to take \$100,000,000 worth of American bonds. Then came the big slump and they did not know what was wrong.

Commissioner LANE. Did you see, while you were on the other side, any effort made by the men whose credit was at stake, to uphold that credit?

Mr. STUART. By the railroad men?

Commissioner LANE. Yes.

Mr. STUART. No; I did not see any quotation from any railroad officer.

Commissioner LANE. There is a demand and a necessity, which I recognize, for more money for developing these railroads. Where were these railroad men this summer, when Europe was filled with newspaper reports that things had gone badly in the United States because of Mr. Taft's regulation policy? [Was it not a humiliation too], as an American citizen, to find that the United States were so misrepresented over there?

Mr. STUART. While I was impressed by the fact that nothing was said by the railroad officials, yet there was a great deal said by the men who deal in that kind of business — the bankers.

Commissioner LANE. Yes; a mere broker.

Mr. STUART. Of course, I paid no attention to what a broker said. But there were some bankers over there who made such a showing. Of course you gentlemen must recognize that if people are scared, they are scared. We are not assuming we are scared if we are not, because railroad men have to face all kinds of things and as a rule they are not cowards."

II. The Credit of American Railroads

It is a remarkable tribute to the stability of American railroads as investments that their own persistent attacks should have left railroad credit substantially unimpaired. That railroad credit has not suffered appreciably appears clearly upon a careful study of the market prices of both bonds and stocks in connection with the prices of the

securities issued by municipalities, by industrial corporations, or by other public service companies.

(See Clifford Thorne: Record, pp. 4899 a-5483.)

For instance:

		1900	1901	1902	1906	1910
						(Dec. 27)
NEW YORK CITY						
3½'s Dock, 1927	Price ¹	109	110	106	99	92
	Basis	3%	2.95%	3.15%	3.55%	4.15%
NEW YORK CENTRAL & HUDSON RIVER R. R.						
3½'s, 1907	Price ¹	109	109	108	98	89½
	Basis	3.20%	3.20%	3.22%	3.57%	3.95%
4's, 1934 (dated 1904)	Price ¹				100¾	93¾
	Basis				3.95%	4.45%
CITY OF PHILADELPHIA						
3½'s, 1924	Price ¹	110	110	108	102	95½
	Basis	2.90%	2.90%	3%	3.35%	3.90%
PENNSYLVANIA R. R.						
Gold 4's, 1923	Price ¹	108	109½	110½	106½	101
	Basis	3.50%	3.37%	3.20%	3.50%	3.90%
4½'s, 1921	Price ¹	116½	114½	111	107	103¼
	Basis	3.40%	3.55%	3.70%	3.87%	4.1%
CITY OF BOSTON						
4's Park, 1902	Price ¹	113½	113½	112	105½	101
	Basis	3.07%	3.05%	3.10%	3.50%	3.90%
BALTIMORE & OHIO R. R.						
Prior Lien 3½'s, 1925	Price ¹	98½	97	94	94¼	92¾
	Basis	3.60%	3.70%	3.90%	3.98%	4.15%
4's, 1948 (dated 1903)	Price ¹	97½	101½	102¾	103	98½
	Basis	4.12%	3.98%	3.87%	3.85%	4.07%

The trend to higher interest rates extends alike to municipal and to railroad bonds; the variations are dependent upon individual considerations.

¹ The prices are taken from the Commercial and Financial Chronicle.

Difficulty in obtaining money is, of course, often due to causes other than lack of credit.

Stuart (Record, pp. 2787-2789).

"Mr. STUART (Vice-President of the Erie Railroad Company). We want to give our property credit. We want to go to the bankers just as any business man would go to them. *We simply want business principles applied.*

Commissioner CLEMENTS. Right on that point — in 1890 there were only 36 per cent of the stocks of railroads in the United States that were receiving any dividends at all and in 1900 it was 46 per cent of the whole that were receiving dividends. In the year 1908 66 per cent received dividends. In 1890 the rate of dividend was 5.45 per cent. Those that received any dividends received 5.45 per cent on an average — all of them. In 1908 the average of the rate of dividends on 66 per cent of the total stock which received dividends was 8.7 per cent. Upon a mileage, in 1900, of 163,000, there was a balance of so-called surplus that had, presumably, gone into the property and had not been distributed in dividends, whereas in 1908 that balance, according to the returns of the carriers, is \$745,000,000.

Commissioner LANE. How much was the first surplus?

Commissioner CLEMENTS. The first balance was \$190,000,000 eighteen years ago.

Commissioner HARLAN. What was the mileage then?

Commissioner CLEMENTS. 163,000 miles. In 1908 it was 233,000 miles, or about 40 per cent more. So that, in proportion to the mileage, there has been an increase of this reserved surplus presumably, that has gone into the betterment of these properties, of something over 200 per cent above what it was in 1890. Now, pursuing the ordinary basis of business credit, has there been a time in these 18 years, since 1890, when the basis of credit was any better than it is now.

Mr. STUART. I think so.

Commissioner CLEMENTS. In view of what has been shown as to the increase in the percentage of dividends on the different stocks and the rate of increase in percentage of dividends paid on those stocks, and the accumulation of this surplus which has gone into the betterment of the property, do you not have to look to some

other source than the present financial status of these roads for this lack of credit of which you speak?

Mr. STUART. To some extent, perhaps. You know, as well as I do, the general history of affairs since 1907, when there was a very severe financial drop. While it was theoretical, perhaps, to some extent, yet we are dealing with conditions. When we want to get money, we have to go and get it if we can get it. That is a fact, regardless of our compilations and other things. As I stated before, the conditions now —

Commissioner CLEMENTS. Now you are looking to other things than the financial status and history; are you not?

Mr. STUART. I do not know. I might answer that during these last three or four years this country has been enjoying the greatest prosperity known in the world's history. History never records such a time of general prosperity for all the citizens as we have enjoyed during certain periods in the last four years, so that the whole country has enjoyed general prosperity with the railroads. But while we are dealing with the figures, we are now confronted with the necessity of getting more money."

III. A Surplus Income for Improvements

A surplus income applicable to improvements undoubtedly strengthens credit. It may also be admitted, for the present, that any railroad properly undertaken, constructed, financed and operated, should be permitted to charge rates, on the whole, high enough to permit it to set aside, from current surplus earnings, a reasonable sum for improvements — besides paying a reasonable dividend. But whenever dividends are paid the amount of surplus applicable to improvements will depend upon the rate of dividend; and if temporarily the income diminishes seriously, even such a company should reduce dividends, not increase rates.

Mr. WILLARD (Record, pp. 2152-2154).

"Commissioner PROUTY. Your common stock is \$152,000,000?

Mr. WILLARD. Yes.

Commissioner PROUTY. \$1,500,000 would be equivalent to one per cent on that stock?

Mr. WILLARD. Yes.

Commissioner PROUTY. Would the financial condition of your company be stronger if you paid a regular dividend of five per cent to your stockholders, with a surplus of \$4,500,000, or if you paid a dividend of six per cent to your stockholders with a surplus of \$3,500,000?

Mr. WILLARD. I think it would be stronger as it is. I could not imagine that a railroad stock to-day paying less than six per cent would have any attractiveness to any investor.

Commissioner PROUTY. It would have attractiveness to investors who wanted to invest their money in a perfectly safe security, if they wanted that security to be perfectly safe.

Mr. WILLARD. I do not think that opinion would be justified.

Commissioner PROUTY. Would it not be justified if you were to pay him five per cent, and if you had a safe surplus of three per cent more?

Mr. WILLARD. I do not think it would be attractive. It would not be attractive to me.

Commissioner PROUTY. I presume not to you, for you would expect to make more than five per cent out of your money.

Mr. WILLARD. I would want to, but not only that — I think this also: I do not believe a man would invest his money at five per cent and assume all the risk of loss, when he could get four per cent with surety.

Commissioner PROUTY. Just what is the risk of loss in the case of the Baltimore & Ohio paying a regular dividend of five per cent year after year and having a safe surplus year after year of \$4,500,000?"

The position taken by the railroads involves substantially the claim that the present rates of dividend and an ample surplus are an immutable fixed charge, which must be met in any event; indeed a fixed charge practically guaranteed by the community.

Mr. WILLARD (Record, pp. 2184-2185).

"Commissioner LANE. Should there be no period of experiment before rates are put into effect? You are asking, practically, that there shall be a guarantee given by the Government of the United

States that your stockholders will get six per cent, and that your railroad will be kept up to its present efficiency and better all the time out of the rates that the shippers pay. That is practically insurance for your road. Now comes an increase in wages. The result of that, as to your revenue, is problematical. Look at this thing, now, from the standpoint of the people at large, and give me your best judgment as to whether there should not be a period of experiment in which, perhaps, you could live, if necessary, upon a surplus for a short time before it was determined that you should advance rates."

Such a claim if established would shift the risks incident to the railroad business from the stockholder to the shipper and the consumer.

If such a claim were allowed, why should the returns on railroad stock be so much higher than the return on the bonds? If the burden of adversity is to be borne by the community — if the stockholder is, in any event, to have his dividend, why make it six or seven or eight per cent instead of four or four and a half?

Mr. McCREA (Record, pp. 2115-2118).

"Commissioner PROUTY. Do you say you think your company ought to pay seven per cent to its stockholders or ought to earn seven per cent on its stock?

Mr. McCREA. I think we ought to pay seven per cent, simply on the ground and exactly the same grounds that I mentioned — that we have for a long time paid six, and our stockholders are as a rule small stockholders; they are real investors, and there is a very large number of them — women and children in the States. There are a very large number of them, and there are varying reasons which justify — that is, the increase in living expenses, it seems to me, justifies those stockholders to expect an increase.

Commissioner PROUTY. I was talking with a man up in my State the other day who had \$10,000 to invest for a widow whose husband had just died and left that amount of cash. He told me he knew of no place where he could invest that money that would return her over five per cent, after the taxes had been paid. Do you know of any investment which would be safe and which would return that

woman five per cent? I do not ask you to mention the investment, but the nature of it.

Mr. McCREA. I think I can only say that when one is investing a widow's funds, you must always aim at a maximum of security of the principal, even if it brings down to rather a minimum the return on it. My sympathies are with your friend up in your State. I can understand how he was in a pretty hard position.

Commissioner PROUTY. I understood you to say the holders of Pennsylvania stock were entitled to seven per cent, that stock being held by widows and orphans. What are the widows entitled to who are not fortunate enough to own Pennsylvania stock?

Mr. McCREA. There is no reason why they should not own it. Those widows who own Pennsylvania stock have bought it, not on my advice or the advice of anybody I know, but they have looked over the situation and they have felt it was a good investment. You see, your friend said he could only get, after taking all things into consideration, five per cent. The widow and orphan who bought Pennsylvania stock, with the premium on it, I doubt if they are getting on an average five per cent on it.

Commissioner PROUTY. And if you paid a dividend of ten per cent, the widow who bought it on that basis would only get five per cent? That being so, if a good security sells on a five per cent basis, why should you pay the stockholder in the Pennsylvania road more than five per cent?

Mr. McCREA. I do not think it does. I think there is justice all around. I think if it is just that the employes should receive a consideration in the matter of increase in cost of living, that certainly the investor who makes it possible for him to be in the service has some right to consideration.

Commissioner PROUTY. Do you think the investor in railroad stock is entitled more than the investor in any other security of the same grade, to such a return?

Mr. McCREA. No, sir, I do not know that I do. It is not a question exactly of the rate. It is a question of what money conditions force on them.

Commissioner PROUTY. But you say you should earn what you pay your stockholders and you should earn an additional sum for the purpose of giving your securities market value. My question is, how much should you pay the stockholders? Is there any reason why, if a good security sells on a five per cent basis, that the stock-

holders of the Pennsylvania Railroad Company should actually receive more than five per cent on their stock?

Mr. McCREA. I can only say that you cannot sell any large amount of stock of the railroad company, I should think, on that basis. Investors as a rule are willing to take a lower rate where they feel it is absolutely certain from the conditions alone, but when they come to the risk of business conditions, they will not take that same risk.

Commissioner PROUTY. What could be more certain than the value of Pennsylvania stock on your theory in this matter? If anything happens, operating cost goes up, you simply advance your rates?

Mr. McCREA. Yes, under those conditions.

Commissioner PROUTY. There could not be anything better than Pennsylvania stock under those conditions?

Mr. McCREA. And I want to preserve it, and that is why I am urging the preservation of the *status quo*.

Commissioner PROUTY. You think you should be allowed to pay seven per cent to your stockholders, and that you should be allowed to do it because the Pennsylvania Railroad has a right to advance its rates whenever those rates are insufficient to yield that?"

IV. *Elements Tending to Impair Credit*

The credit of American railroads has been strained, not only by unfounded doubts raised by the railroads themselves in their mistaken publicity campaign for higher rates, but also by certain policies and practices of the railroads, which have led the public to question the wisdom and integrity of their management.

Among these are the following:

A. **UNDUE EXPANSION**

The immoderate ambition for size has in a number of ways strained railroad credit.

- (a) There is obviously in all human institutions a limit of greatest efficiency. A railroad may be too large, as it may be too small, to be managed

and operated with the best results. There is strong reason to believe that a number of the American railroad systems have far exceeded the limit of greatest efficiency.

- (b) Railroad expansion in all our older communities has ordinarily been accomplished by means of leases or stock acquisition. The result has been, in most instances, to greatly increase the fixed charges of the main company, and to greatly reduce the margin of safety, i. e., the proportion of net income applicable to dividends to the fixed charges; for instance:

Shortly after Mr. Charles S. Mellen became President of the New York, New Haven & Hartford Railroad in 1904, this Company entered upon the policy of rapid expansion with the following result:

Year ending June 30	Fixed charges including taxes.	Net income applicable to dividends.
1906	10,721,266	10,193,151
1907	13,011,091	9,706,024
1908	18,167,354	5,910,019
1909	21,108,249	7,453,372
1910	21,496,982	11,117,781

Prior to 1906 the unsecured debentures of this Company were sold by it on a basis of a $3\frac{1}{2}$ per cent yield, and its 8 per cent stock (tax exempt in Massachusetts) was sold at 200, that is, on a 4 per cent basis. In January, 1908, \$39,025,000 of 6 per cent 40-year gold debentures, convertible into stock after 1915, were issued at par.

In January, 1910, \$45,469,500 of its 8 per cent stock was issued at \$125 per share.

- (c) The acquisition of other properties by lease or stock control has frequently been accomplished at excessive cost.

For instance:

- (1) The acquisition by the New York, New Haven & Hartford Railroad Company, of competing steamship lines, of the Rhode Island trolley system, and of the Boston & Maine (see pp. 150-151, above).
- (2) The lease by the New York Central Railroad (see pp. 159-160, above).
- (d) The consolidation of railroad properties tends to limit the aggregate market for securities, as most investors desire to distribute their risks. Investors are more ready to take \$10,000 of bonds or stock in each of five companies than to take \$50,000 of bonds or stock in a single company. The process of consolidation results therefore in contracting the potential market.

B. DISHONESTY AND FINANCIAL SCANDALS

Credit is said to be a delicate fabric, and fear is contagious. Every disclosure of dishonesty raises a host of doubts in the minds of investors.

The car repair graft by high officials on the Illinois Central, the embezzlement by the Treasurer of the Big Four, the graft on the Pennsylvania, and the Baltimore and Ohio disclosed in connection with this Commission's investigation (see p. 87, above), and the Chicago and Alton scandal, following the great Insurance scandals, necessarily shake confidence, particularly as the control-

ling financial powers are largely the same in the railroad and the insurance companies.

C. DEFIANCE OF PUBLIC RIGHTS AND OPINION

If any general distrust of railway investments exists, its cause will be found not in the increased burdens imposed by wage advances or by government regulation, but in a distrust of the purposes and judgment of those who control and manage the great railroad properties. For more than a quarter of a century efforts have been persistent to remove the abuses incident to railroad management — abuses from which stockholders, employees, shippers, and the public were alike sufferers. To those efforts for improvement — for reasonable regulation — the railroads, their managers and financiers, presented almost united opposition. The abolition of rebates and of passes, the introduction of safety appliances, the prohibition of barbarously excessive hours of labor were changes obviously demanded in the interests of the railroads, their employees, and the public. Yet each measure was vigorously and at times corruptly resisted. To-day the managers of the railroads themselves freely admit that such government regulation was wise. Is it surprising that an intelligent public should harbor doubts as to the judgment or motives of those who have been so egregiously wrong in the past?

CONCLUSION

This investigation has developed clearly that the railroads to meet any existing needs should look not without, but within. If their net income is insufficient, the proper remedy is not higher rates resulting in higher costs and lessened business, but scientific management, resulting in lower costs, in higher wages and increased business. If their credit is impaired, the proper remedy is not to apply the delusive stimulant of higher rates, but to strengthen their organizations by introducing advanced methods and eliminating questionable practices. Thus they will maintain credit by deserving it.

Let the railroads heed the judgment recently expressed by a wise and impartial observer:

"The distrust of American railways by the people at large is not due primarily to over-capitalization, to overcharges, to undisputed instances of overbearing administration, or to over-swollen fortunes made from unjust if not illegal manipulation of railway properties. The distrust is founded upon the belief that in the past railway men as a class have not sought the truth with a determination to act upon it, but have fought the truth regarding the social and economic relations of the railway. Railway managers of the type which Mr. Willard represents to-day cordially accept the principle of Government regulation, the abolition of rebates, the withdrawal of the railways from the practice of legislative lobbying, and the enforcement by law of the use of safety appliances, such as air

brakes and couplers on freight trains. But all these reforms when they were first introduced were persistently and bitterly fought by many, if not most, of the influential railway men of the country. Is it surprising that the public should wonder whether it may not be necessary to force the doctrine of efficiency upon the attention of the railways by some external authority like that of the Interstate Commerce Commission, just as it has been necessary to force upon their attention by legislative authority the desirability of regulation, of the abolition of rebates, and of the extension of safety appliances?"

LOUIS D. BRANDEIS,

*Counsel for Traffic Committee of Commercial Organizations
of the Atlantic Seaboard*

Boston, Jan. 3, 1911



Volume 4

4

BEFORE THE
INTERSTATE COMMERCE COMMISSION.

DOCKET No. 3500.

IN RE INVESTIGATION OF PROPOSED ADVANCES IN RATES BY CARRIERS IN WESTERN TRUNK LINE, TRANS-MISSOURI, AND ILLINOIS FREIGHT COMMITTEE TERRITORY.

ARGUMENT

FOR

CHICAGO AND ALTON RAILROAD COMPANY.

[INDEX ON INSIDE OF COVER.]

LUCIEN HUGH ALEXANDER,
Special Counsel.

SILAS H. STRAWN,
*General Solicitor,
Of Counsel.*

Business

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BEFORE THE INTERSTATE COMMERCE COMMISSION.

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IN RE PROPOSED ADVANCES IN RATES BY
CARRIERS.

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The Chicago and Alton Railroad operates an all-track mileage of 1266.2 miles and a single-track mileage of 919.64 miles, and constitutes the direct route between the great cities of Chicago, St. Louis and Kansas City, serving populous sections of the States of Illinois and Missouri, including the capital cities of both.

It submits that the proposed increases in rates now under investigation should be allowed for the following reasons:

1. *The present rates are not compensatory for the service rendered.*

2. *Its statements in evidence in this proceeding show a deficit of \$441,096.80 in net operating revenue for the fiscal year ending 30 June, 1910, compared with that for 1909.*

3. *Its net operating revenue for the five following months, July, August, September, October, and November, 1910, shows a decrease from the corresponding months in the year 1909 of \$779,014.10.*

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4. *Between 1900 and 1910, inclusive, its freight earnings increased 63%, but its payments for loss and damage claims increased 392%.*

5. *The increased cost of its labor for the year 1910 over the year 1903 was \$531,515.73, a sum equal to more than 12% of its net operating revenue for 1910.*

Since this hearing began the trainmen have been granted an increase of 10% and the engineers a like increase, which is not included in the above.

6. *Its expenses have been increased to a large extent and are being continuously increased by compliance with Federal and State laws and the requirements of the Interstate Commerce Commission and the State Commissions, respectively, in re safety appliances, hours of labor, employers' liability, and methods of accounting.*

7. *The Commission's ten-year exhibit of cumulative statistics for the Chicago and Alton establishes (a) that its ten-year average per cent of annual corporate income upon capital stock outstanding is but 3.32 per cent, and for the fiscal year 1910 fell to 3.01 from 4.37, the percentage for 1909; and (b) that the percentage of annual operating income on cost of road and equipment has averaged, during the ten years, but 3.69 per cent per annum, and for the fiscal year 1910 dropped to 3.68 from 4.10, the percentage for 1909.*

In an address in New York City, on October 1, 1910, President Taft declared:

"Our new railway act goes much further and greatly increases the powers and duties of the Interstate Commerce Commission. The discretion of the Commissioners, not within judicial control by appeal, is now

very wide, and they have in their hands for the weal or woe of general business a power that sometimes makes one tremble."

Words from such a source and of such a character, fraught as they are with so much of serious import for the future, are startling in their plainness and clearness of meaning, and must give us cause for pause.

It would be idle for the American people to ignore the fact that a revolution was brought about in the railway world in June, 1910, when the Congress placed in the hands of this Commission "control of the purse" of all interstate railways, thereby delegating the power over them of virtual life and death, for while the Commission's power must be exercised within the limits of constitutional prerogative, a serious error by this Commission would not only paralyze railway development thruout the country, but would force many carriers into insolvency before constitutional restraints could be effectively invoked.

The Perspective of the Situation.

In the effort, in dealing with the railroad problem, to get the desired perspective, it is necessary to consider the relationship of the present situation, not only to the past, but particularly to the future, for in the proceedings pending, principles will be enunciated and a policy declared, born of the experiences of the past and of a prognosis of the future, which will have an all-potent influence, thru the next few years at least, upon the welfare, not only of the railroads of the country, but upon the commercial and industrial life of the

entire body of the American people, and perhaps upon the destiny of the government itself,—for who shall say to what dire consequences enforced government ownership might not lead on the American continent?

Within the present decade the railroad situation was such as to call forth, less than three years ago, the following public expression of view from the long-time chairman of this Commission, Hon. Martin A. Knapp, the President Judge of the newly-created United States Court of Commerce:

"We are nearing the end, let us hope, of a period of violent and sometimes misdirected agitation, an agitation provoked by methods and practices long in vogue, but now happily nowhere defended, when we may confidently expect an early and healthy reaction in public sentiment." *

This was in May, 1908. Two years pass, and in an effort to solve the American railroad problem, Congress gives to the Interstate Commerce Commission the increased power embodied in the legislation of 18 June, 1910, thereby bringing about a complete revolution in the rate-making power, one which caused President Taft, within four months of the enactment, to declare in a public address in New York City that "*they [the Commission] have in their hands, for the weal or woe of general business, a power that sometimes makes one tremble.*" That the Commission understands the seriousness of the situation is evidenced by the fact that in the Eastern and Western proceedings they have taken approximately 10,000 pages of testimony.

**The Annals* for 1908, the Amer. Acad. Pol. and Soc. Sc.

A Grave Constitutional Problem.

The work of the Interstate Commission Commission in the past has been productive of so much good and has prevented so much in the way of evil results, that it would seem almost ungracious to call attention, in the opening portions of this brief, to a grave constitutional question which presents itself,—one which, however, should not be passed without comment, altho of course this is not the *forum* for the argument or settlement of such an issue.

The point is this: If it be true, and it is certainly beyond dispute, that the Congress in the exercise of its legislative functions has established a standard for railway rates by declaring that they must be just and reasonable, it is equally true that the Congress has endeavored to confer upon the Commission the power to determine the issue as to whether a given rate or fabric of rates is within the standard so established and to issue a restraining order, *in fact an injunction*, prohibiting the collection of such rate or rates, if convinced that they are unlawful.

If this power sought to be conferred is merely the exercise of an administrative function, analagous to the determination of the height of a bridge over a navigable stream, then there can be no doubt but that the exercise of the power by the Commission is constitutional; but, on the other hand, if the determination of the issue as to whether the given rate or fabric of rates is or is not within the standard established by the

Congress, and the issuance *by the Commission* of an injunction constitute in fact the exercise of judicial powers, then the broad constitutional question presents itself, tho to state it is to answer it, whether Congress has the authority, under the Constitution, to vest such judicial power in any group of persons, the members of which hold their offices only for a term of seven years instead of during good behavior, as required under Article III, Section 1, of the Constitution of the United States in the cases of all those authorized to exercise the judicial power of the United States, and *the sole object* of which provision was to secure for the exercise of the judicial power, vested by the people of the nation, thru the Constitution, in the government of the United States, a body of men more independent if appointed during good behavior, that is, for life, than it was believed they could be if they served only during a term of years with the mere possibility of reappointment before them. A study of the debates in the United States Constitutional Convention will establish beyond dispute that this was the reason which brought about this constitutional requirement.

While this question as to the nature of the powers conferred upon the Commission has been considered by some of our courts *prior to the legislation of 1910*, it may well be doubted if it has been passed upon finally, especially in view of the fact that the power now conferred by the Act of 18 June, 1910, is vastly greater both in its operation and effects than any heretofore exercised by the Commission.

The following words of Chief Justice White, of the Supreme Court of the United States, in a recent decision by that tribunal, declaring the points to be considered by the court in passing upon an order of the Commission, are pertinent and suggestive, particularly the portions under "*c*," which we place in italics:

"Beyond controversy, in determining whether an order of the commission shall be suspended or set aside, we must consider,

"a, all relevant questions of constitutional power or right;

"b, all pertinent questions as to whether the administrative order is within the scope of the delegated authority under which it purports to have been made; and,

"c, a proposition *which we state independently*, although in its essence it *may* be contained in the previous one, viz., *whether, even although the order be in form within the delegated power, nevertheless it must be treated as not embraced therein, because the exertion of authority which is questioned has been manifested in such an unreasonable manner as to cause it, in truth, to be within the elementary rule that the substance, and not the shadow, determines the validity of the exercise of the power.*"

Interstate Commerce Commission v. Illinois Central R. R. Co., 215 U. S., 452, 470.

It cannot be doubted but that the Commission, *qua* Commission, have in the past regarded many of their functions to be essentially judicial in character, for their hearings are conducted in a room, presumably designed with the approval of its members, the appointments of which are similar to those of a Court of

Justice with its elevated bench, its bar, and its witness box; the substance as well as the form of the proceedings conform in essential particulars to those of a court, the members of the bar and persons present rise as a mark of respect when the Commission enter to hear the causes pending, and the members of the Commission when trying cases are frequently addressed, and very properly so if their functions are judicial, by the titles "Judge" and "Your Honor."

Whether or not the Commission is in fact and in substance, irrespective of the shadow, a body exercising a part of the judicial power of the United States, it is to be hoped that some method for the solution of the constitutional problem may be found to avoid the chaos which would result from any sudden or material change in the plan, under which the Commission is now so effectively working.

The Vital Issue in the Case.

We will concentrate upon the point which we regard as the dominant one not only to the Chicago and Alton, but from the standpoint of all the carriers involved, and from that of the public as well, to wit, the question as to whether or not American railways are to be permitted to accumulate a surplus sufficient to take care of obsolescence, to maintain credit, and to keep their properties abreast of the needs of the time. In doing so, we will draw *ad libitum* from the luminous testimony of the four

executive heads of great systems, who appeared before the Commission to justify the proposed increases in rates, President McCrea of the Pennsylvania system, President Brown of the New York Central Lines, President Ripley of the Santa Fe system, and President Willard of the Baltimore and Ohio.

The argument will be presented under two heads:

I. *The interests of the public welfare demand that the common carriers of the nation shall be permitted to earn sufficient surplus to enable their development to keep pace with the demands of the times.*

II. *Under the law as enacted by the Congress the responsibility for the future credit of American railways rests upon the Interstate Commerce Commission, and this credit cannot be maintained unless the Commission authorize a substantial increase in revenue.*

I.

The interest of the public welfare demands that the common carriers of the nation shall be permitted to earn sufficient surplus to enable their development to keep pace with the demands of the times.

The vast influence of the railways upon the life of the American people cannot be better indicated than by calling attention to the fact that in the fiscal year end-

ing June 30, 1910, the total operating revenues of all our railways amounted to \$2,787,266,136.64, and the operating expenses to \$1,847,189,773.03, and that the total mileage operated was a trifle over 239,052 miles.

The marvelous growth and development of American transportation facilities caused Judge Knapp in 1908, when chairman of the Interstate Commerce Commission, to exclaim:

"To my mind it is a most impressive fact, so great as to elude the grasp of imagination, that the railway traffic of the country fully doubled in the first seven years of this twentieth century."

And at the same time he asserted, in his carefully prepared paper before the American Academy of Political and Social Science:*

"Without regard to the personnel of railroad officials, without regard primarily to the interest of the stockholders, but in the interest of public welfare and national property we must permit railway earnings to be adequate for railway improvement at advantage and profit."

He also declared:

"I not only want railway earnings to permit of rapid and sufficient railway extension, with increased facilities for comfort and convenience, for speed and safety, but I want all that to be accomplished by and connected with the most liberal compensation to an adequate force of competent employés."

The present proceedings, with the element of enormous wage advances, puts this closing declaration of

* *The Annals of same for 1908.*

the then chairman of the Commission for the first time to practical test. President McCrea testified (docket 3400, p. 1981):

"The things that are clear to us are that there have been three increases of wages, together with adjustments, and other things of that kind, which simply show that [in the last ten years] the employés have had their wages increased 33 per cent. Those have been founded on the claim that it was necessary they should have them to meet the increased cost of living.

"Our stockholders, of which there are some 60,000 to 70,000, half of whom are women, have not received practically any increase in that period. They are receiving today the same amount that they received ten years back, and yet the expenses of their living have gone up just as much as those of the other people."

No one can doubt but that President Taft clearly understood the damage which would result to the country, from a failure on the part of the Commission to take a broad and statesmanlike view of the situation, when he so recently declared that "*they have in their hands for the weal or woe of general business a power that sometimes makes one tremble.*"

And within a few short weeks after making the statement he appointed the chairman of the Commission a United States Circuit Judge, to head the new Court of Commerce, the court which will in the first instance hear such appeals as may be taken from the decisions of the Commission.

The following principle, as declared by Judge Knapp in May, 1908, is therefore particularly relevant now and should, and we believe necessarily will, have

great weight with his former colleagues upon the Commission. He said:

"Whatever may be our national or State policy in other respects, whatever regulations may be prescribed or obligations imposed, *there must be the opportunity* to charge rates which will give sufficient earnings to make the [railway] business fairly profitable *and to attract the needful capital for its ample extension.*

"* * * *in the interest of public welfare and national prosperity we must permit railway earnings to be adequate for railway improvement at advantage and profit.*"

With all deference to the Commission, it is suggested that if they are not possessed of judicial power, which it is very briefly outlined at p. 4, *supra*, the Congress has in effect attempted to give them, and the use of which power under our system of government is always subject to review by an appellate court, but are exercising vast and far-reaching delegated legislative powers in determining the reasonableness of rates, then the weighty responsibility can only be discharged by the most far-seeing statesmanship, which will take into view in the broadest possible manner the future needs of the country and the possible effects thereon of the pending decision in so far as it may accelerate or interfere with the flow of capital into railway development within the next decade or score of years, thereby either enhancing our growth as a nation or breeding a train of far-reaching disasters. In this view of the subject, the mere thirty or forty millions of dollars of revenue per annum involved to the carriers in the present proceedings, vastly important as that sum is to their present needs,

sinks to insignificance, and the great principle at stake looms across the horizon as dominating the situation.

This vast *legislative* power, if such it really is that the Commission is exercising, is not subject to review except on constitutional grounds, but in the hands of a Commission composed of seven men is open to all the objections so successfully urged at the founding of our present government in 1787 against any legislative body not bicameral in character, for it was then determined that two independent legislative groups were essential to good legislation, each acting as a check upon the other.

In the light of all this, and a full realization of the difficulties besetting the exercise of the powers of the Commission in the future, of whatever character they may be, it is not improbable that President Taft in selecting the titular head of the Commission to preside over the new Court of Commerce, not only desired to pay this compliment to the Commission for its arduous work in the past, but believed one so long familiar with the Commission's routine duties could better lead the new court in the exercise of such appellate jurisdiction as has thus far been conferred upon it by the Congress—in fact, would be more free from restraint in encouraging it to extend the full measure of its powers of review, whatever they may now be or hereafter may become as the result of further legislation. However this may be, it is against the genesis of our Anglo-Saxon institutions that vast uncontrollable power should be lodged anywhere, and certainly in a republic it is contrary to the canons of political science.

If a deduction from these arguments may be ventured it is that the present situation demands a high order not only of administrative ability, but of statesmanship on the part of the Commission.

The Call of the Future.

But great as has been railroad expansion in the past to meet our marvelous cumulative growth as a nation, the pressing question is, what does the future hold in store? President Willard testified (docket 3400, p. 2179):

"One of the ablest railroad men we have in this country, Mr. James J. Hill, has said that the railroads should spend *a billion dollars a year for five years to provide the additional facilities required*. I am sure that the only way in which that money can be obtained is because of the voluntary giving up of those who now have it, and they will not give it up unless they get something instead of it that is sufficiently attractive so that they want it as against any other thing."

President Ripley, basing his judgment upon his great experience in the development of the West, asserted (docket 3500, p. 62):

"Last year, the year just closed, it [the Santa Fe system] earned 8.8 per cent. Now, you ask if that is not money enough, and I say most emphatically that it is not money enough. *It is not money enough to do the things that the public expect of us, the things that we must do if we are to keep abreast of the times*. When an institution as large as ours is standing still, it begins to go backwards, and if we are to meet or approximately meet, the demands of the public *we have got to earn a very much larger margin than we*

have earned yet, in order to maintain our credit and obtain the money to do what is necessary to be done."

And he further said (p. 65):

"As to our having had money enough, I suppose our experience is the same as that of most other railroads, and that is that *there has never been a time when we did not have before us pressing demands for two or three or four times as much money as was available*."

President McCrea declared (docket 3400, p. 1951):

"The Pennsylvania Railroad and many of the roads embraced in its system were built at a time when it was difficult to secure capital for such enterprises. The country through which the roads were built was at that time comparatively thinly settled and the business light. The character of the construction which was suitable for the time and the existing conditions was, to a large extent, unsuited to later conditions.

"The safety of the public and of employes required elimination of grade crossings of highways, the use of safety appliances, and the use of improved materials and equipment, all of which in themselves do not yield much, if any, net, return, and it was to meet these conditions and to adapt its road and equipment to modern requirements that the uncapitalized earnings in the form of surplus have been so freely spent."

And President McCrea also testified (docket 3400, p. 1961):

"In closing, I want to say that, based on my railroad knowledge and experience, I believe that, generally speaking, that which I have said in regard to the Pennsylvania Railroad *as to the necessity for the rate advance is equally true of almost all railroads in the United States*, certainly

those which are conservatively managed and which are endeavoring to give the public such a service as they have a right to expect."

So also these weighty words, born of President McCrea's great experience, should carry conviction (docket 3400, pp. 954-55):

"What would have been the condition if the company's earnings had been so restricted in the past as to prevent it from accumulating surplus earnings available for the improvement of its property? If the \$262,000,000 which have been thus expended on the lines east of Pittsburgh had been realized through a sale of securities, these securities would have had to have been sold at a price which could have been realized for them, and if the earnings of the company had been such as to barely cover the amounts required to meet its interest and dividends on its then outstanding securities, the prices realized for any additional issues of securities would have been such that the additional charges to which the company would have been subjected would have today necessitated rates higher than those which have been prevailing in order to enable the company merely to meet its interest and dividend charges."

And furthermore he asserted this vital need of the situation (docket 3400, pp. 1952-53):

"It is vitally important that in the future the company should be enabled to continue to pursue the policy which has guided it in the past, and to provide in part at least for future additions and improvements out of surplus earnings.

"It is fairly to be expected that the company will be required to make as great expenditures in the future as it has made in the past. An enormous amount of work remains to be done, for which additional funds will have to be secured."

How can they be secured at a fair rate? How can the railways of the country keep pace with this nation's marvelous strides, and how rapid is its growth and development to be? The men who are real statesmen look ahead thru the years and decades and centuries, gauging the future by the experiences of the past.

Growth of Population.

Our probable future increase of population necessarily has an all-important bearing upon the present situation.

Lincoln, when President, and who in so many ways seemed to have the vision of a seer, as the nation drifted into civil war, deemed this growth of population of such transcendent importance that he discussed it *in extenso* in his second annual message to the Congress. See *Messages and Papers of the Presidents*, Vol. VI, p. 136, *et seq.*

Lincoln there exhibited as follows the known increase by decades in our population since the first census in 1790:

"Year.	Population.	Ratio of Increase (per cent).
"1790	3,929,827	.....
"1800	5,305,937	35.02
"1810	7,239,814	36.45
"1820	9,628,131	33.13
"1830	12,866,020	33.49
"1840	17,069,453	32.67
"1850	23,191,876	35.87
"1860	31,443,790	35.58"

Then, among a number of other deductions, he made these:

"This shows an average decennial increase of 34.6 per cent in population through the seventy years from our first to our last census yet taken.

"It is seen that the ratio of increase at no one of these seven periods is either 2 per cent below or 2 per cent above the average, thus showing how inflexible and consequently how reliable the law of increase in our case is. Assuming that it will continue, it gives the following results:"

Lincoln then inserted a table of estimated decennial increases for a period of seventy future years, from the year 1860 to 1930, by decades, and said:

"These figures show that our country may be as populous as Europe is at some point between 1920 and 1930."

He had previously in the message massed much in the way of statistics concerning density of population in our various States and in Europe. He then made an extraordinary prediction as follows:

"And we will reach this, too, if we do not ourselves relinquish the chance by the folly and evils of disunion or by long and exhausting war springing from the only great element of national discord among us."

This message was sent to the Congress December 1, 1862. We did (as Lincoln foreshadowed would be the case if we continued the war) decrease for the time being our ratio of increase, and so it came about that Lincoln's estimate that in 1900 we would have, if the war were not continued, a population of one hundred

and three millions, was somewhat higher than the fact, as the war went on.

Now, applying the Lincoln method and assuming that we had a population in 1910 of approximately one hundred millions, a mere twenty per cent decennial increase (as against the more than 34 per cent used by Lincoln in his calculation) will have the following startling results (we do not state the detail figures lower than tens of thousands and for sake of brevity only at twenty-year intervals):

Estimated Increase of Population in the United States

Year.	Population.
1910	100,000,000
1930	156,250,000
1950	244,140,000
1970	381,470,000
1990	596,000,000

This represents the increase during only eighty years, less than three generations. Such figures are enough to startle and stagger every thinking man in America, even though we make reasonable deductions from the calculation by reason of the possible operation of the Malthusian doctrine. Yet there can be no adequate perspective of the present railroad problem without taking them into view, for the transportation facilities should keep pace with this growth of population, and must, if we are to progress as a nation as rapidly as we should.

President McCrea testified (docket 3400, pp. 2073-74):

"What this country needs, and what has done so much to develop the country has been the transportation that has been given it. At this present time, I feel that that improvement—additional facilities, if you may choose to so put it—in all branches of the service and all kinds of expenditure, is very badly needed.

"When the Commission, as you put it to me, ask what ought to govern them in deciding as to the general scheme of rates, I think that they must be governed by the knowledge of the needs of the country as a whole and by the conditions under which those needs can be supplied; and that which governs the supply of those things is the return that comes to the investor who is supplying the money to do it.

"Any broad scheme of rates that does not do that, treating the country as a broad proposition, treating the railroads as a broad proposition, will of course fall short of what the country absolutely requires."

President Ripley, in the Western hearing, asserted in his evidence (docket 3500, p. 84):

"There is no railroad in this Western country—I will not say that—there is hardly any railroad in this country today that is built as it ought to be built, that has the safety appliances that it ought to have, or that is in the condition that the public interests require. I think all my railroad friends will bear me out in making that statement. Of course we do not like to depreciate our own property, but the best railroads in this country West of the Alleghany Mountains are very, very far short of what they ought to be to give the service that the public requires and has the right to demand—or would have the right to demand if they paid for it."

He also declared (docket 3500, p. 90):

"There is danger of obsolescence in everything we own. We do not know when we will have to throw away our loco-

*motives; something may be discovered, electrical or otherwise, which will make them obsolete. * * * The railroad of fifty years ago would not carry anything now, and the railroad of fifty years ago would not be considered even equal to a contractor's plan for building a railroad. They have been in constant course of rebuilding ever since, and that has been going on indefinitely."*

And again (p. 72):

"There is no railroad in this western territory which has not substantially arrived now at the point where all its original facilities which have not already been replaced must be replaced. Practically all the railroads in this western country have been partially rebuilt, or will have to be almost immediately partially rebuilt. Many of them have been almost wholly rebuilt, and yet there are a thousand and one things that are almost obsolete which have got to be renewed. We have very large matters of that kind staring us in the face now."

Speaking further of obsolescence, President Ripley testified (docket 3500, p. 71):

"A railroad company certainly should be sufficiently strong financially to take care of it, either by improvement, either by a stated charge to depreciation, or by improvements made out of earnings which would offset any depreciation that there may be. For instance, a station which is entirely adequate for today, or was entirely adequate when it was built fifteen years ago, becomes inadequate, and it has to be torn down and cast away and replaced with another building. I have already said that I think these things should be largely, if not entirely, made out of earnings, and that provides in a way for obsolescence or depreciation."

Of another phase of additions and betterments, President Willard declared (docket 3400, p. 2173):

"I think it is only fair that any addition to the property that adds to its earning capacity, adds to its net income, should stand on its own bottom and should not be charged on the business or the capital already invested. I think it is entirely proper, too, and right, that additional securities should be issued to pay for that. But there is a large class of work to be done on the railroad, such as the elimination of grade crossings, railroad crossings, and innumerable matters of that kind that we all know of and that I could not enumerate, that are constantly going on and cannot now be included in operating expenses, and properly so, no doubt. They must be paid for, they may be paid for out of the income, and they have to be capitalized—at least, they have to be shown as money expended, and that money so expended is shown in the capital cost of the road."

The Surplus Problem.

The proper distribution of such expenses brings us squarely face to face with the question of surplus. On this point President Ripley testified (docket 3500, p. 69):

"The question of the proper distribution between capital and earnings is one that can be argued on both sides, and argued almost indefinitely, but it is my belief that the present generation should join in the expense of those matters—that the railroads should be allowed to pay for them out of earnings in order that the entire burden may not be settled on posterity."

And he gave this forceful illustration:

"When a municipality builds a water works, or issues bonds for the improvement of its streets, it begins at once

to apply a certain amount of the taxes to the extinction of those bonds. The railroad companies should be permitted to do the same thing. A portion of the income derived by these municipalities from taxes is immediately set aside as a sinking fund to extinguish that debt. *Unless the railroad company is permitted to earn sufficient margin over and above its dividend requirements*—assuming always that its dividend requirements are reasonable—it not only loses its credit, but it is also unable to meet the class of expenditures that I have been discussing without the sale of additional bonds, the placing of additional mortgages on its property, and the consequent transferring of a certain burden upon posterity which ought to be borne by the present generation. That is what has been done in England. The policy of paying everything out of its dividends, putting nothing back into the property out of earnings, has been pursued to an extent there that has made the capitalization of those railroads so large that it is almost impossible for them to earn anything on it."

President Willard asserted (docket 3400, p. 2181):

"When new capital is issued by the railroad, it ought to be because of expenditures which will take care of that particular capital. Otherwise, the issuance of such capital becomes a burden on that already existing, and you cannot put additional burdens on the securities already issued without destroying to that extent your credit. Conservative management means the holding up of credit."

President Ripley declared in his evidence (docket 3500, p. 93):

"It has frequently been stated that it has been the policy of the Pennsylvania Railroad to put one dollar into the property for every dollar of dividends paid, and I think that is a very modest and very excellent plan."

And President Willard, in speaking of the policy which has been pursued on the Baltimore and Ohio of expending upon the property 50 cents for every dollar paid in dividends, declared (docket 3400, p. 2168):

"A more liberal policy on the Pennsylvania Railroad has made that what it is. So I think what we have done is the very minimum we can do if we are to maintain the property and maintain dividend payments, and it is certainly most essential that we should, if we are to raise money on proper returns in the future."

President McCrea himself did not hesitate to assert (docket 3400, p. 2134):

"There is not another road in the world that has as good physical condition as the Pennsylvania Railroad."

Such testimony but accords with the known fact that the name "Pennsylvania" is synonymous in every civilized land, with railroad management, operation, and financing of the highest standard, and while considering this serious question of the surplus, *it is well for us to hear the evidence of the president of the Pennsylvania concerning the policy which has made that road what it is*, and to consider whether it would not have been better for the country if similar methods had been pursued upon every road in our land,—and if so in the past, why not in the future, for our country is yet very young? We have fortunately in this record the benefit of the testimony of the highest official of the Pennsylvania system, President McCrea. He testified, referring to the Pennsylvania (docket 3400, p. 1954):

"Its ability to sell its stock and bonds has been due to the fact that it has not merely paid dividends of 6 per cent or 7 per cent, chiefly the former, but that it has been able to show at the end of the year large surplus earnings which it has put back into the property. When investors have been asked to purchase its stock or bonds, the company has been able to show that it was then in receipt of enough income to enable it to make a fair return on the securities that it proposed to issue, even if the proceeds of these securities could not be so invested as to enable the company to derive an immediate return thereon. In other words, the existence of the surplus earnings established a credit which enabled the company to secure the additional funds necessary to make improvements or additions as these became necessary."

He had previously briefly explained the Pennsylvania surplus system, testifying (docket 3400, p. 1950):

"The Pennsylvania Railroad Company has for many years past, as a result of its operations, realized a substantial surplus in each year over and above the amount required to enable it to meet its interest charges and pay moderate dividends on its stock to its stockholders. This surplus has varied in amount from year to year. For the last ten years the average has been about \$12,000,000 a year, practically all of which has been expended on the property for the purpose of enabling the company to conduct its operations more safely, more efficiently, and more cheaply."

He also testified (docket 3400, pp. 1951-52):

"Had these earnings not been available, and had they not expanded for the purposes indicated, the Pennsylvania Railroad would today be a very different railroad and would have been wholly unable to render the service to the public which it is today rendering. The accumulation of these

surplus earnings which have been thus expended *has only been possible because the rates of freight in force since the passage of the Interstate Commerce Act have been sufficient to realize for the company amounts in excess of its expenses, taxes, interest, and dividends.*"

This last sentence is the key to the success of the Pennsylvania Railroad system, and it is suggested should be kept ever in mind by the members of the Interstate Commerce Commission to be used for the guidance of the other roads of the country until in the interests of the public they have been brought to the Pennsylvania standard of efficiency and safety.

This is no vague theory based on stock jobbing quotations; it is no "dream of a dreamer, who dreamed that he dreamed." It is sworn evidence of facts which portray the real scientific management, the best the railroad world has ever known.

There are problems, grave and difficult, yet unsolved in the railroad situation, some of which this Commission may in time succeed in settling or in aiding satisfactorily to adjust, such as:

- (1) *Uniform classification;*
- (2) *A generally accepted standard for the determination of the reasonableness of a rate;*
- (3) *The exact proportion of earnings, over and above fixed charges, cost of operation and reasonable dividends, which should, in the interests of the nation's continued and consistent growth in transportation facilities, be carried into surplus for the development of the property;*
- (4) *The proportion of this which should be capitalized and under what circumstances;*
- (5) *The just and reasonable rate of return on capital investment and method for its computation;*

(6) *A system of consolidation which will preserve the benefits of private ownership and, in the interest of good service to the public, at reasonable cost, prevent unduly large revenues upon the part of carriers particularly favorably located, and poverty on the part of others serving equally important sections of the community; etc., etc., etc.*

With these difficult problems and many others the situation is teeming. They will not all be settled in a year, a decade, or a generation, and perhaps not one for many years, and doubtless some never finally as the evolution of our world, our peoples, their civilization and their needs, will ever demand constant readjustment thru the cycles of the centuries.

It is suggested that the errors of judgment of some of the complainants lie in the fact that they believe the big and difficult problems of the railway situation in this country, and some of which have been stated above, are capable of immediate arbitrary settlement by some rule of thumb. This fundamental error is the trail of the dead herring thru their case.

Then there are many people who have been misled by a superficial reading of the decisions of the courts into jumping to the conclusion that the legal rate of interest is the limit of reasonable maximum return placed by the courts upon capital invested in public service corporations, wholly overlooking the point that no court of appellate jurisdiction has ever so held, and that the expressions concerning 6 per cent and other similar percentages have arisen in cases where the issue was the constitutional one, whether the investor was being deprived of his property or its proper use without due process of law. *This error has been responsible for much of the confusion in this railway surplus earnings problem.*

We now turn to the second proposition:

II.

Under the law as enacted by Congress the responsibility for the future credit of American railways rests upon the Interstate Commerce Commission, and this credit cannot be maintained unless the Commission authorizes a substantial increase in revenue.

We are living so close to the revolution that has been brought about by the recent legislation of Congress that it is difficult to see it in adequate perspective, difficult fully to realize the true situation, so difficult indeed that at first blush the proposition that the credit of American railways rests upon the Commission seems startling. Yet President Taft has not hesitated to say that *the Commission "have in their hands for the weal or woe of general business a power that sometimes makes one tremble."*

When the situation is analyzed it cannot be logically disputed, but that this Commission, "the Supreme Court of the Railroads," as it has recently been called, has been given the power of maintaining or destroying the credit of the American railway system, which has already been seriously impaired as a result of the agitation and other causes operating through recent years, for it is a truism that he who is possessed of power is responsible for its exercise. Just as the courts of the United States are responsible for the maintenance of the due and proper administration of justice and of a republican form of government, so is this Commission weighted with the grave responsibility of maintaining

the development of the American railway system, which cannot continue properly to develop if the rates which this Commission decides the carriers may charge are inadequate "to invite the flow of capital necessary to enable railway development to keep pace with the growth of the country."

Judge Knapp's Dictum.

Chairman Knapp clearly saw that this was the crux of the situation when, in 1908, in combating some of the wild theories then in vogue, he said:

"Whatever may be our national or state policy in other respects, whatever regulations may be prescribed or obligations imposed, *there must be the opportunity to charge rates which will give sufficient earnings to make the business fairly profitable and to attract the needful capital for its ample extension.*"

In the presidents of the great systems, who testified in the Eastern and Western hearings, the Commission had before it four of the ablest railroad experts in the world, and who placed at the service of the Commission their unequalled judgment and experience and with the utmost candor on oath declared the relentless facts as to the waning credit of the American railway system, and the future of which now depends upon the course of this Commission. Said President McCrea, after explaining in detail the inability to market railway bonds at a reasonable rate of interest (docket 3400, p. 2111):

"Today, in view of the various uncertainties that are surrounding the country, through decisions of the Supreme

Court and interpretations of the Interstate Commerce Law, and a number of other things going on, there is a large amount of uncertainty in which everybody is about marking time."

President Willard declared (docket 3400, p. 2207):

"Unfortunately, *I am unable to see any way* in which we can maintain the policy that we have been maintaining, and which, in my opinion, ought to be maintained, *unless this increase of rates is granted*. That is the conclusion I am forced to reach."

He also asserted (pp. 2159-60):

"One more thing I would like to say, with all respect to the Commission—certainly with no desire to be in any sense other than that—that *I believe in railroad matters today there is not any single element that is having such an effect upon railroad credit or upon the feeling of railroad managers as the effect that this decision may possibly have*."

And President Brown declared (docket 3400, p. 2361):

"But with respect to the capital remaining to be secured for these improvements, *I can confidently say that the ability of the railroads to obtain it depends upon the ability of the companies to secure increases in revenue* through increased freight rates, commensurate with the recent increases in expenses."

Mr. Commissioner Lane asked President McCrea this question (docket 3400, p. 2112):

"Let me put it this way: Suppose these questions of decisions and interpretations of law were out of the way, would

you not have, in your judgment, a much better market for your good securities within a reasonable time?"

And the following colloquy ensued:

"Mr. McCREA: Either much better or much worse, sir.

"Commissioner LANE: Depending on the decisions?

"Mr. McCREA: *Depending on the decisions*."

The Bond Situation.

Questions were repeatedly asked the presidents by members of the Commission. The following from the record (docket 3400, pp. 2107-2111) is particularly illuminating of the situation, with its rapid fire of interrogatories from both Mr. Commissioner Lane and Mr. Commissioner Prouty:

"Commissioner LANE: Let me interrupt there to ask this question: What reason have you to give showing that railroad securities at the present time and under existing rates are not attractive to investors?

"Mr. McCREA: Only our own experience and my observation of what it has been with other roads. For perhaps the last twelve or fifteen months, I should say, there has been absolutely no bond market of any kind.

"Commissioner LANE: That is to say, you could not sell bonds?

"Mr. McCREA: Could not sell bonds; there was absolutely no market whatever.

"Commissioner LANE: What efforts have been made to sell bonds for fairly capitalized roads, that have failed?

"Mr. McCREA: I can only answer so far as we are concerned. We have gone to consult bankers about raising money on some of the branches, and we have had these

bonds for sale, and they simply say there is no use in talking about it, there is absolutely no market. The last time I went to one of them, we had sold three and one-half millions, if I recollect it right, of Vandalia bonds, which are really gilt-edged bonds, and they told me then, ten days afterwards, that they still had a million and a half dollars of these bonds in their safe.

"Commissioner PROUTY: What is the rate of interest?"

"Mr. McCREA: 4 per cent.

"Commissioner PROUTY: Suppose they had been 5 per cent bonds?"

Mr. McCREA: 5 per cent bonds probably would, of course, go very much better, but that so far for a bond is too high a rate of interest. That would carry with it the rate on the stock; when it came to the sale of the stock it would force the dividends that would be necessary or the returns that would be necessary on the stock to a very high point. The two go hand in hand.

"Commissioner LANE: That is to say, a low rate of interest on bonds justifies a low dividend on stock and a high rate of interest—"

"Mr. McCREA: They bear a relation; they unquestionably bear a very close relationship. In other words, if I can sell 3 per cent bonds I could perhaps sell 5 per cent stock—these figures being only comparative. If I sell 4 per cent bonds or 3½ per cent bonds—I do not want to be pinned down to a particular illustrative figure such as I am giving—perhaps then it would mean 6 per cent. If you have to sell 5 per cent bonds, to sell any stock it would run up to 7 or 7½ per cent dividends, in my judgment.

"Commissioner LANE: So far as basing the rate is concerned, the rate as charged to the shipper, it is better to have a railroad largely bonded, with a large issue of bonds at a low rate of interest than a large issue of stock?"

Mr. McCREA: I am not sure about that. I think that is pretty poor—that is not good financing, because the interest

on your bonds is an absolute fixed charge, and if you fail, through some radical disturbances which happen every now and then, to be able to meet your interest everything is subject to the lien of that bond, and your stock may be wiped out; whereas, if you have a large amount of stock and a small amount of bonds, and your recuperative power is good, you may not be in danger—if every year or two years you are to forego paying any dividends. Your recuperative power is tremendous under those circumstances.

"Commissioner LANE: You have a greater leeway?"

"Mr. McCREA: Yes, you have a greater leeway. I think a great many States will not allow you to issue bonds in excess of 50 per cent of your stock.

"Commissioner LANE: To pursue my original question just a little bit further. I have understood that there was a very large issue of stock and bonds made by the railroads in this country during the last two years, and a very considerable amount during the last three years. You bring forward the proposition that it is necessary to increase rates so as to more firmly establish credit and enable you to get the money with which you can build facilities necessary for the carrying on of the transportation necessities of the country. Is it a fact that any first-class security, at a reasonable rate of interest, has gone begging and that there is no market in the United States or in Europe for a good bond of a good railroad at a reasonable rate?"

"Mr. McCREA: Of course, market conditions vary from time to time, but I should say that there has been no time since the financial difficulties in 1908 when there has been a good bond market or a good stock market.

"Commissioner LANE: You mean as an investing market, not as a speculative market?"

"Mr. McCREA: Oh, yes. We are talking of purely an investing market; that is, where each railroad company has its own stock to sell for the purpose of raising money to do

certain things. I do not mean the speculative side of it at all."

President Brown, in dealing with the bond situation, presented a concrete illustration. He said (docket 3400, pp. 2361-62):

"The situation cannot perhaps be better illustrated than by reference to the recent attempts of the Michigan Central Railroad to market in this country and in Europe an issue of \$17,000,000 of its four per cent debentures.

"The low bonded indebtedness of the Michigan Central and the previous stability of its earnings should have made such an issue attractive to any security market. It has been impossible, however, either in this country or in Europe, to secure any bid for these securities which could be considered. The best bid which the company has been able to obtain was one recently made of 87 for the entire issue. The acceptance of this bid would have involved a discount of over \$2,250,000 on an issue of \$17,000,000, and of course could not be considered. The only alternative is to borrow money on short time notes, and the result of an effort to do this shows that it will be necessary to pay approximately, and in my opinion, fully six per cent interest on such notes. I believe that this general condition will continue to exist until the revenue of the companies can be increased through an increase in rates."

President Willard declared (docket 3400, pp. 2160-61):

"I happened to be in Berlin and in London a short time this summer, and while there I met men who have much to do with the furnishing of money to the Baltimore & Ohio Railroad. I found in every instance the thing that they asked first, the thing that they wanted to know about first,

was what would be the outcome of the new condition of affairs. * * * This thought was all the time evident: that that was a matter that was in their minds, and until that was disposed of in some manner things waited. There is a feeling of hesitancy, and that feeling today dominates the railroad situation."

Facts versus Theories.

These are sworn facts, actual illustrations of the condition existing. How are they met by those shippers who have seen fit to be represented in this hearing? Not by concrete facts, not by the offer of some syndicate to take bonds at a reasonable figure, but by a mass of theorizing, by reams of theoretical figures and a volume of stock market quotations, to prove that the credit of the railways was never better than today. One pet theory is that the credit of most of the American railways is relatively better than of the District of Columbia and Commonwealth of Massachusetts, and the argument is advanced that the *increase* in the rate of return upon railroad bonds demanded by the investing public is not so great relatively as the percentage of increase in the matter of District of Columbia and Massachusetts bonds. We have no evidence before us of the condition surrounding the issuance of the District of Columbia and Massachusetts bonds, and it is, in consequence, impossible to make a comparative study of those bonds with the bonds of the carriers; but we are indebted to our opponents for bringing out very clearly and forcibly, for it is the major premise in this theoretical argument of theirs, the fact that there has been a large increase in the "basic rate of re-

turn" demanded by the investing public on railroad bonds; indeed, an increase of about 10 per cent on bonds of the New York Central and Pennsylvania, from 1904 to 1910 inclusive. (See on this point table No. 19 in the brief for the counsel for I. C. C.) *If this be true, it furnishes a most substantial argument for an increase in rates commensurate with the increased cost of capital to the carriers, and if this higher rate is necessary upon bonds, it will necessarily be reflected in the basic rate of return demanded upon stocks of the corporations issuing the bonds, for the stockholder faces a much greater hazard than the bondholder.*

In so serious a matter as the financing of the transportation systems of this country, we cannot give serious consideration to vague theories. We must face facts as they exist, and in this record they have been fully presented, and with the utmost frankness, by the presidents of four of the greatest systems in the country, men who would probably have preferred to remain silent had it not been necessary to disclose the true situation.

A most significant table of depreciation in the value of railroad securities during the calendar year 1910, the year of revolution in the control of rate making, appeared in the issue of the *Wall Street Journal* of January 5, 1911, showing in detail as to fifty leading carriers the depreciation as to each, and which, on these fifty railways alone, totals for the calendar year 1910 the enormous loss in market value of \$632,224,000, or 16.06 per cent of their total par value, while fifty

leading industrials, also tabulated, show a depreciation of but 12.27 per cent of their aggregate par value.

Can it be doubted, in the face of such facts, that it is necessary for the companies to maintain an adequate surplus in order to maintain their credit, to take care of obsolescence, and to keep pace with the demands of the public, not only for increased but for better transportation facilities? President Ripley has said (docket 3500, p. 5, of pamphlet reprint of Mr. Ripley's testimony):

"We should be able to take in more *partners* as stockholders instead of taking in more *creditors* as bondholders. But that has not been always possible; in fact, it is very seldom possible, either with us or with any railroad company."

And President Willard forcibly said (docket 3400, p. 2276):

"I think that the duty will rest with the Commission, as I view it, to see *that such return is made to the railroad as will cause the public to feel that our securities are attractive.*"

How is this to be brought about? Dare we, in face of the facts as they exist, assume that the present market for bonds represents but a temporary condition, and that there is no basic, fundamental cause back of it all (such as higher money rates and the causes back of that), which will make it permanent if the situation is not relieved by the Commission permitting adequate rates to go into effect? Substantially, this question was put to President McCrea by Mr. Commissioner Lane when he propounded the following interrogatory (docket 3400, p. 2113):

"Supposing that that is so—though I am not dealing with that phase of the proposition at all, but with other phases—and supposing that it is necessary to have an increased earning so as to maintain credit, I ask, should that argument be urged if the conditions which made a bad market now are but temporary?"

President McCrea answered as follows:

"Yes, sir, I think so. The railroads necessarily live from hand to mouth. They cannot afford to discount the future. If experience demonstrates that my conclusions and the conclusions of these railroad gentlemen are in error and the rates have gone too high, I suppose, under the power that is given you, they can be ruled as being unjust or whatever the term is; but I do not think, at least, that the railroads can afford to temporize in the way of discounting a possible future. We have to live from day to day and treat the conditions as they are from time to time."

Again, President McCrea said, discussing another but similar phase of the situation (docket 3400, pp. 1960-61):

"In my judgment, therefore, it would be wholly unsafe to assume that the company will, as the result of the growth of its business, be enabled to recoup itself for the depletion in its surplus revenue which is certain to result from a continuance of the present operating cost. Under these conditions, I feel that it is essential in the interest of the public and of shippers, as well as of the railroad company itself, that it should be permitted to secure through an advance in rates the amount which represents its additional outlay on account of the advance in wages, in order that its surplus earnings may continue at approximately the rate at which they have been running in the past. It will require the ex-

penditure of more than these surplus earnings to enable the company to keep pace with the demands of the public and of its shippers, and unquestionably additional capital must be secured in the future. If we are to obtain this, we must not only be in a position to make a fair return on it, but we must be able to show a margin of safety in our earnings."

President McCrea also called attention at one point in his testimony to the method originally obtaining in the financing of railroads. He said (docket 3400, p. 2121):

"Even in your days, you can recollect what was true in our own territory, that you could not get a new railroad built when you were allowed to sell a bond of \$1,000 and give a bonus of stock of a thousand dollars; you could not even sell them under those conditions unless the community through which they passed voted contributions of so much a mile, and a very large part of the railroads west of the Ohio River were built under those conditions, and those conditions governed within the past 25 years. How the development is going to be done, where they have not got any and where the population has to follow the development, I do not know."

President Willard declared (docket 3400, p. 2186):

"It seems to me it would be better to face the possibilities of excess earnings on the part of some of the railroads—which in any event must all be spent under the general eye of the Commission—than to face the possibility of a deficit, which would mean stagnation."

And he also pointed out that in the last analysis it will be mainly the public who will suffer through a

stoppage of transportation developments resulting from impaired credit. He said (docket 3400, p. 2186):

"If, for any reason, it is thought wise to depart from the practice that has obtained in the past when estimates have shown that because of increased wages or other increased expenses it was necessary to increase the income, and such action has been taken—if that practice is to be departed from, and the experiment is to be tried, and that shows an inability on the part of the company to maintain its payments and maintain the property, it seems to me that *in the end the people will be the ones that will suffer* more than the comparatively few stockholders, however numerous they may actually be. The individual stockholder may be obliged to accept, for a short period, a reduced dividend; but *in the meantime developments would stop because credit would be impaired.*"

President McCrea pointed out that if stagnation results, the railway does not stand still, but drifts backwards. He said (docket 3400, p. 2137):

"There is no such thing as a big railroad standing still. When it does it commences to drift backwards right away. If this company is expected to serve the community and keep up to its present standard, you have to go straight ahead and continue to make large expenditures."

It is plain where the responsibility for the future exists. Can the carriers do more than they have in the present proceedings to make the situation clear? Their officers would fail in the discharge of their duty if they did not bring home to the Commission clearly, forcibly, and plainly the Commission's grave responsibility, for it is not a fiction. It is not a theory. It is a plain,

solemn reality, and it has nowhere been more clearly expressed than by President Willard when he declared (docket 3400, pp. 2185-86):

"Today a new condition of affairs has come about. The credit of the American railroads has been placed in the hands of this Commission. There has been taken from the hands of the owners the responsibility, the burden, of maintaining the credit of the American railroads to such an extent that it may [not] be possible for them to obtain money in the future on terms such as the people ought to pay. In the end, of course, the people pay the rates that pay the interest on the bonds. In my opinion, the credit should be such that the railroads can obtain money on the most favorable basis. That should be the measure of credit. They should get money on the most favorable basis, and *that credit rests in the hands of this Commission.*"

These solemn words but reflect the opinion of President Taft, when on October 1, 1910, he asserted that the Commission "have in their hands for the weal or woe of general business a power that sometimes makes one tremble."

We close with the potent words spoken in 1908 by President Judge Martin A. Knapp, of the new Court of Commerce, then the chairman of the Interstate Commerce Commission, and uttered at a time when the sole responsibility as to the rate situation, which directly controls the revenues, had not been placed by Congress upon the Commission and when he was merely declaring the fundamental principle which ought to govern the rate situation:

"Whatever may be our national or State policy in other respects, whatever regulations may be prescribed or obli-

gations imposed, there must be the opportunity to charge rates which will give sufficient earnings to make the business fairly profitable and to attract the needful capital for its ample extension. * * *

"Without regard to the personnel of railroad officials, without regard primarily to the interest of the stockholders, but *in the interest of public welfare and national prosperity*, we must permit railway earnings to be adequate for railway improvement at advantage and profit."

The situation rests in the hands of the Commission.

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